Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway, Building 127, Room 112
San Diego, California 92132-5190

ACTION MEMORANDUM
February 08, 2002

CERCLA TIME-CRITICAL REMOVAL ACTION
INSTALLATION RESTORATION SITE 2
ALAMEDA POINT
ALAMEDA, CALIFORNIA

DCN: FWSD-RACII-02-0083

Site Status:	**National Priority List**
Category of Removal:	**Time-Critical Removal Action**
CERCLIS ID:	**CA2170023236**
Site ID:	**Operable Unit 4A, Installation Restoration Site 2**

FINAL ACTION MEMORANDUM
CERCLA TIME CRITICAL REMOVAL ACTION
REVISION 1

DATED 25 SEPTEMBER 2002

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FOSTER WHEELER

FOSTER WHEELER ENVIRONMENTAL CORPORATION

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ABBREVIATIONS AND ACRONYMS

AM	Action Memorandum
AOC	area of contamination
ARAR	applicable or relevant and appropriate requirement
BAAQMD	Bay Area Air Quality Management District
BCT	BRAC cleanup team
BRAC	Base Realignment and Closure
Ca-HSC	California Health and Safety Code
Cal/EPA	California Environmental Protection Agency
CCR	California Code of Regulations
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
DERP	Defense Environmental Restoration Program
DoD	U.S. Department of Defense
DON	U.S. Department of the Navy
DTSC	Department of Toxic Substances Control
E&E	Ecology and Environment, Inc.
EOD	explosive ordnance disposal
EPA	U.S. Environmental Protection Agency
EPP	Environmental Protection Plan
ESRP	Explosives Safety Remediation Plan
FFA	Federal Facilities Agreement
FWENC	Foster Wheeler Environmental Corporation
HSWA	Hazardous and Solid Waste Amendment
IR	Installation Restoration
IRP	Installation Restoration Program
NAS	Naval Air Station
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NWRSA	National Wildlife Refuge System Administration Act
OEW	Ordnance and Explosive Waste
OU	Operable Unit
RAB	Restoration Advisory Board

ABBREVIATIONS AND ACRONYMS
(Continued)

RAC	risk assessment code
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
RWQCB	Regional Water Quality Control Board
SSPORTS	Supervisor of Shipbuilding Conversion and Repair, Portsmouth
SUXOS	Senior UXO Supervisor
TBC	to be considered
TCRA	Time-Critical Removal Action
UIC	Unit Identification Code
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
UXO	unexploded ordnance

Southwest Division
Naval Facilities Engineering Command
Contracts Department
1220 Pacific Highway, Building 127, Room 112
San Diego, California 92132-5190

February 8, 2002

SUBJECT: ACTION MEMORANDUM FOR CERCLA TIME-CRITICAL REMOVAL ACTION AT INSTALLATION RESTORATION SITE 2, ALAMEDA POINT, ALAMEDA, CALIFORNIA

Site Status:	**National Priorities List**
Category of Removal:	**Time-Critical Removal Action**
CERCLIS ID:	**CA2170023236**
Site ID:	**Operable Unit 4A, Installation Restoration Site 2**

1.0 PURPOSE

The purpose of this Action Memorandum (AM) is to document, for the Administrative Record, the U.S. Department of the Navy's (DON's) decision to undertake a Time-Critical Removal Action (TCRA) for ordnance items within the Possible Ordnance and Explosive Waste (OEW) Burial Site located in Operable Unit (OU) 4A, Installation Restoration (IR) Site 2. The U.S. Department of Defense (DoD) has the authority to undertake Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) responses including removal actions under 42 United States Code (USC), Section 9604, 10 USC, Section 2701, and Federal Executive Order 12580. This proposed TCRA is consistent with Chapter 6.8 of the California Health and Safety Code (Ca-HSC). The document was prepared in accordance with U.S. Environmental Protection Agency (EPA) guidelines set forth in the *Superfund Removal: Action Memorandum Guidance* (EPA, 1990), and DON guidance documents for TCRAs under CERCLA.

The DON, with federal regulatory oversight by the EPA, is the lead agency for implementing the proposed TCRA. The DON and EPA are working in cooperation with the California Department of Toxic Substances Control (DTSC), Regional Water Quality Control Board (RWQCB) for the San Francisco Bay Region, and the City of Alameda. The DON is also working in cooperation with the Alameda Reuse and Redevelopment Authority through the Base Realignment and Closure (BRAC) cleanup team (BCT), the Restoration Advisory Board (RAB), and the public to implement this removal action.

The proposed TCRA includes the removal of OEW from the Possible OEW Burial Site located in the southeastern portion of IR Site 2. OEW is waste military munitions or munitions fragments derived from military munitions as defined in the *Policy to Implement the EPA's Military Munition Rule* (DoD, 1998). The OEW may be used or unused and may potentially be unexploded ordnance (UXO).

The Possible OEW Burial Site, which is approximately 2.5 acres, will be excavated to a depth of 1 foot. OEW and debris will be removed and disposed, and then the excavated area will be backfilled with the sifted soil. The goal of this proposed TCRA is to substantially eliminate the potential explosive risks from OEW to human and ecological receptors. The DON is expediting this removal action at this time to mitigate future risk. The proposed TCRA evaluation does not address chemical or radiological contamination in soil, sediment, or groundwater.

The cleanup of OEW is being performed under the Defense Environmental Restoration Program (DERP) for BRAC. The removal action is a critical component of the DON's Remedial Investigation/Feasibility Study (RI/FS) for IR Site 2 under the CERCLA. The proposed removal action for IR Site 2 is deemed consistent with the CERCLA process. CERCLA does not specifically address OEW as a hazardous substance; response actions to address OEW require a different approach to balance the risks and impacts of OEW with the risks of inaction. These are defined within Appendix C, Evaluation of Removal Alternatives.

2.0 SITE CONDITIONS AND BACKGROUND

The TCRA area, known within this document as the Possible OEW Burial Site, located within IR Site 2 at Alameda Point, Alameda, California, is currently managed as a wildlife refuge. IR Site 2 is located in the southwestern corner of Alameda Point (Figure 2-1), and includes the West Beach Landfill (the landfill), the West Beach Landfill Wetland (the wetland) and the associated interior and coastal margins (Figure 2-2). The Possible OEW Burial Site consists of approximately 2.5 acres and is located in the southeast portion of the landfill (Figure 2-2). The entire area will become part of the proposed Alameda National Wildlife Refuge to be managed by the U.S. Fish and Wildlife Service (USFWS) (LSA Associates, Inc., 2001). The following information provides a brief overview of the site and previous investigations.

2.1 SITE DESCRIPTION

2.1.1 Removal Site Evaluation

Previous investigations have identified that the landfill, sited on approximately 77 acres within IR Site 2, served as the disposal area at Naval Air Station (NAS) Alameda starting in 1956 and ceased in early 1978. Although waste operations officially ceased in March 1978, unauthorized dumping continued until 1980 (Neptune, 2000). A sea wall was constructed in 1956 to the south and west of the landfill in order to protect it from tidal flow. A culvert was installed within the sea wall to hydraulically connect the San Francisco Bay to waters within the sea wall. A substantial dike (Figure 2-2) was built around the perimeter of IR Site 2 after landfill operations ceased.

It was documented that in 1976, four truck loads of inert ordnance from the Defense Logistics Agency, Alameda, was buried in the landfill [Supervisor of Shipbuilding Converson and Repair, Portsmouth (SSPORTS, 1999)]. The inert ordnance ranged in size from 4 feet long by 12 inches wide to smaller ammunition. Riot control agents containing o-Chlorobenzalmalonitrile (CS), placed in containers as a loose powder, were also buried in the landfill (Roy F. Weston, 2000). The CS riot control agents were left over from the 1968 to 1969 Berkeley student riots. A former NAS Alameda employee identified the southeast corner of the landfill also as an area where inert ordnance was previously disposed (SSPORTS, 1999).

In 1999, a surface search was conducted in IR Site 2 to visually locate any exposed ordnance material. The search was not considered a 100 percent verified sweep by the DON. No ordnance or ordnance materials were found during the surface search. During the surface search, a MK 26 magnetometer was used in an attempt to define the boundaries of the landfill. Site and soil conditions did not permit a positive determination of the landfill boundaries.

A geophysical survey of the Possible OEW Burial Site was conducted after the completion of the surface search. A Geometrics G-88 Portable Cesium Sensor Magnetometer was used for the survey. The magnetic anomalies identified during the geophysical survey are depicted in Figure 2-3.

2.1.2 Physical Location

Alameda Point (formerly NAS Alameda) is located on the west end of Alameda Island, which lies approximately 10 miles east of San Francisco on the east side of the San Francisco Bay, adjacent to the city of Oakland. Alameda Point is approximately 2 miles long from east to west and 1 mile long from north to south. Alameda Point occupies approximately 1,700 acres of land within the city of Alameda, Alameda County, California, and a portion of the city and county of San Francisco, California. IR Site 2 is located in the southwest portion of Alameda Point.

The Bay Area experiences a maritime climate with mild summer and winter temperatures. Because of the varied topography of the Bay Area, climatic conditions vary widely in proximate areas. Heavy fog occurs on an average of 21 days per year. Based on data from the nearest weather station (Oakland Museum), the mean annual precipitation in the area is 23.41 inches. Most rainfall occurs between the months of November and April. Mean low and high temperatures are 52 degrees Fahrenheit (°F) and 67°F, respectively. The wind direction is predominately from the northwest and southeast. The runway directions, adjacent to IR Sites 1 and 2, are indicators of the direction of prevailing winds. The installation does not have naturally occurring surface streams or ponds, so precipitation returns to the atmosphere by means of evaporation and transpiration, runoff in the storm drain system, or infiltration into the soil.

The U.S. Army acquired the western tip of Alameda Island in 1930 from the City of Alameda. In 1936, the DON acquired title to the land from the U.S. Army and began building NAS Alameda in response to the military buildup in Europe before World War II. Construction involved the filling of natural tidelands, marshes, and sloughs between the Oakland Inner Harbor and the western tip of Alameda Island. During the war, the DON acquired additional land for the installation. Following the end of the war, the installation continued its primary mission of providing facilities and support for the fleet aviation activities. During its operation as an active military base, the installation provided berthing for the Pacific Fleet ships and was a major center for naval aviation.

In 1993, NAS Alameda was identified for closure, and in 1997, the base ceased all naval activities.

2.1.3 Site Characteristics

IR Site 2 is located on the western coastline of Alameda Point, Alameda, California, and includes the landfill, the wetland, and the associated interior and coastal margins. The landfill is located on approximately 77 acres in the extreme southwestern end of Alameda Point. The landfill was used as the main disposal area for the former NAS Alameda from approximately 1956 through 1978. A seawall was constructed along the southern and western edges of the site, and a 36-inch culvert was installed in the seawall to hydraulically connect the San Francisco Bay to waters within the seawall. A substantial (10- to 15-foot) dike was installed around the perimeter of the site when disposal operations ceased. A gated fence borders IR Site 2 to the north and east. The Possible OEW Burial Site is located entirely within the landfill portion of IR Site 2 and occupies approximately 2.5 acres. There are no buildings or structures located in the Possible OEW Burial Site TCRA area.

The wetland covers about 33 acres within IR Site 2 and is bounded by the landfill to the north and east and by the coastal margin adjacent to the San Francisco Bay on the south and west. The wetland contains two perennial ponds. The northern pond is connected to the bay by the culvert. The southern pond was created by the removal of dredged materials for use as landfill cover. Fresh water has since filled the excavation area of the southern pond. The only material known to have been deposited in the wetland is scrap metal [Ecology and Environment, Inc. (E&E), 1983].

The coastal margin is the thin strip of land between the landfill or wetland and the bay. It acts as a buffer for the landfill and the wetland and is composed of the perimeter dike and a rip-rap seawall. Materials in the coastal margin differ from those in the landfill and wetland. The interior margin is the area of IR Site 2 that lies outside the landfill and wetland to the north and east. It also contains part of the perimeter dike and includes all areas outside the dike to the north and east. It is a geographic definition used primarily for classifying sampling locations. Mustard and thistles are the dominant vegetation of the upland areas while bermuda grass and pickleweed inhabit the wetland [Foster Wheeler Environmental Corporation (FWENC, 2001; USFWS, 1998]. The site is currently used as a bird and wildlife sanctuary and will be transferred to the USFWS for use as a National Wildlife Refuge.

Wildlife species that are federally listed as endangered or threatened could potentially occur on IR Site 2 based on their presence at similar areas in Alameda County. These species include the winter-run chinook salmon, tidewater goby, California brown pelican, California clapper rail, western snowy plover, California least tern, American peregrine falcon, Steller sea lion, and salt marsh harvest mouse. However, based on a literature review by the USFWS (USFWS, 1998), none of these species are known to currently inhabit IR Site 2. The open water area adjacent to IR Site 2 is a wintering area for migratory birds and provides a resting and feeding habitat for over 1,000 ducks during the winter (USFWS, 1998).

2.1.4 Release or Threatened Release of a Hazardous Substance, Pollutant, or Contaminant into the Environment

Previous investigations have documented the placement of OEW in IR Site 2 and are summarized below.

> ***Unexploded Ordnance Site Investigation Final Summary Report*, SSPORTS Environmental Detachment, October 1999.** Former NAS Alameda personnel identified the southeast corner of the landfill as an area where inert ordnance was previously disposed. A geophysical survey was conducted at the Possible OEW Burial Site. Several large subsurface masses and discrete subsurface anomalies were revealed; because of high background noise, however, it could not be determined whether they were ordnance. The report states that further investigation is warranted.
>
> ***Unexploded Ordnance Intrusive Investigation Implementation Work Package*, Roy F. Weston, Inc., May 2000.** This document states that in 1976, four truck loads of inert ordnance from the Defense Logistics Agency, Alameda, was buried in IR Site 2. The inert ordnance ranged in size from 4 feet long by 12 inches wide to smaller ammunition. The document also states that there was a one-time disposal of CS riot control agents, placed in containers as a loose powder, and buried in the landfill. The riot control agents were left over from the 1968 to 1969 Berkeley student riots.

Evaluation of the potential routes of exposure focuses on human exposure to OEW. Workers at the Possible OEW Burial Site conducting intrusive activities and/or removal activities would have the greatest potential for exposure to OEW. A surface sweep and geophysical survey have already been conducted in this area. Therefore, it is unlikely that an explosive device would trigger while traversing the Possible OEW Burial Site, although it cannot be ruled out. Wildlife that inhabit the Possible OEW Burial Site may also be impacted if an explosion were to occur.

Other human exposure to ordnance items at the Possible OEW Burial Site is presently limited because the Possible OEW Burial Site is managed as a wildlife refuge. Currently, agency personnel, such as USFWS and scientists, are permitted on site with a UXO specialist escort. The Possible OEW Burial Site may have greater access by the public when the site becomes a National Wildlife Refuge under the jurisdiction of the USFWS.

2.1.5 National Priorities List Status

The National Priorities List is a list, developed by the EPA, of hazardous waste sites nationwide that pose the greatest risk to the public health and thus warrant priority responses under CERCLA. Alameda Point, which includes IR Site 2, is a National Priorities List site and will be addressed under the CERCLA and National Oil and Hazardous Substances Pollution Contingency Plan (NCP) regulatory process.

2.2 OTHER ACTIONS TO DATE

Previous and current actions at the Possible OEW Burial Site are discussed below.

2.2.1 Previous Actions

A surface sweep for OEW was conducted in 1999. Ordnance items were not identified. A geophysical survey was conducted following the surface sweep. Several large subsurface masses and discrete subsurface anomalies were revealed that warrant further investigation.

2.2.2 Current Actions

The DON is currently cutting existing vegetation to 4 inches or less and conducting a surface sweep at IR Site 2 as part of the *Draft Focused RI Work Plan* (FWENC, 2002). No other government or private actions are currently being conducted at the Possible OEW Burial Site. As the lead federal agency, the DON has initiated the following community relations activities:

- Scheduled public meetings
- Regular meetings with the Alameda Reuse and Redevelopment Agency, the RAB, and the BCT
- Preparation of fact sheets and brochures describing the IR process
- Maintenance of information repositories accessible to the public

To gain a more thorough understanding of the activities associated with the TCRA, the public is encouraged to review documents contained in the information repositories that are located at:

1) Alameda Main Public Library (Historic Alameda High School)
   2220 Central Avenue
   Alameda, California

2) Alameda Point, Former NAS Alameda
   950 West Mall Square, Suite 141
   Alameda, California

The complete Administrative Record is located at 1220 Pacific Highway, San Diego, California, and is maintained by Ms. Diana Silva, Southwest Division Naval Facilities Engineering Command Administration Record[s] Manager, 619-532-3676. The Index of Administrative Records for Alameda Point is included in Appendix A.

2.3 STATE AND LOCAL AUTHORITIES' ROLE

2.3.1 State and Local Actions to Date

Federal Executive Order 12580 delegates the President's authority to undertake CERCLA response actions to the DoD. Congress further outlined this authority in its DERP Amendments, which can be found at 10 USC, Sections 2701 through 2705. Both CERCLA Section 120(f) and 10 USC, Section 2705 require DON facilities to ensure that the EPA and state and local officials be given the timely opportunity to review and comment on DON proposed response actions. CERCLA Section 120 further requires the DON to apply state removal and remedial action regulatory requirements at its facilities.

Accordingly, DTSC and RWQCB have provided technical advice, oversight, and approval during previous activities conducted for the Possible OEW Burial Site including the *Draft Focused RI Work Plan for IR Site 2* (FWENC, 2002).

2.3.2 Potential for Continued State and Local Response

EPA, DTSC, and RWQCB currently provide technical oversight to the Installation Restoration Program (IRP), assist at monthly program management meetings for Alameda Point, and review documents produced under the IRP for the NAS Alameda facility. It is anticipated that technical oversight will continue throughout the IRP process.

3.0 REMOVAL ACTION CONSIDERATIONS

In accordance with the NCP, the following factors must be considered in determining the appropriateness of a removal action [Title 40 Code of Federal Regulations (CFR), Part 300.415(b)(2)]:

i. Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;

ii. Actual or potential contamination of drinking water supplies or sensitive ecosystems;

iii. Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers that may pose a threat of release;

iv. High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface that may migrate;

v. Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;

vi. Threat of fire or explosion;

vii. The availability of other appropriate federal or state response mechanisms to respond to the release; and

viii. Other situations or factors that may pose threats to public health or welfare of the United States or the environment.

3.1 THREATS TO PUBLIC HEALTH OR WELFARE

Of the above factors, the following apply to the current conditions at IR Site 2:

i. "Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants." Erosion could uncover OEW which could potentially expose human and ecological receptors.

v. "Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released". Rainfall and surface runoff could expose OEW by eroding the surface soils.

vi. "Threat of fire or explosion". There is a threat of fire and explosion from the OEW presumed to be within the Possible OEW Burial Site.

vii. "The availability of other appropriate federal or state response mechanisms to respond to the release". There are no other federal or state response mechanisms that could respond to a release or explosion.

This removal action does not address human health or ecological risks from soil contamination. The evaluation of risk at Possible OEW Burial Site focuses on hazards to human health and the environment associated with ordnance items. Risk from ordnance items has not been quantified,

but was qualitatively addressed. This was done using the Risk Assessment Procedures for Ordnance and Explosives Sites worksheet (Appendix B) from the U.S. Army Corps of Engineers' pamphlet on Ordnance and Explosives Response, which assists in assigning hazard severity and hazard probability on the basis of numerical rating scores.

"Hazard severity" categories are defined to provide a qualitative measure of the worst possible event that could result from personnel exposure to various types and quantities of unexploded ordnance. Numerical rating scores are assigned to the following categories associated with the types of ordnance that may be encountered at a given site. The maximum allowable score is 61:

- Conventional ordnance and ammunition (up to 10 points)
- Pyrotechnics (up to 10 points)
- High-bulk explosives (up to 10 points)
- Bulk propellants (up to 6 points)
- Chemical warfare material and radiological weapons (up to 25 points)

Hazard severity ratings are presented in Appendix B. Based on information provided in Table B-1 of this Appendix, the category of hazard severity is identified as "critical".

"Hazard probability" is defined as the probability that a hazard has been or will be created due to the presence and other rated factors of UXO or explosive materials on a formerly used DoD site. Hazard probability takes into account the following categories related to area, extent, and accessibility of an OEW hazard, with a maximum allowable score of 30:

- Locations of OEW hazards (up to 5 points)
- Distance to nearest inhabited location/structure likely to be at risk from OEW hazard (up to 5 points)
- Number(s) of building(s) within a 2-mile radius measured from the OEW hazard area, not the installation boundary (up to 5 points)
- Types of buildings (within a 2-mile radius) (up to 5 points)
- Accessibility to site, which refers to access by humans to ordnance and explosives (up to 5 points)
- Site dynamics, which deals with site conditions that are subject to change in the future but may be stable at present (up to 5 points)

The total hazard probability value presented in Table B-2 of Appendix B is used to identify the hazard probability level. Possible OEW Burial Site's hazard probability is Level B, "probable", which is assigned a value of 23 points.

Risk evaluation results indicate that the hazard severity category is "critical." This determination was based on a calculated hazard severity value of 15, which reflects the potential presence of inert ordnance from the Defense Logistics Agency, Alameda, ranging in size from 4 feet long by 12 inches wide to smaller ammunition, and riot control agents. In addition, the hazard probability level is considered "probable." This determination was based on a calculated hazard probability value of 23. As noted in Table B-3 of Appendix B, this combination of severity and probability yields a risk assessment code (RAC) of 2, indicating a "high priority". Site-specific factors significantly influenced the hazard probability scoring. These factors included the presence of potential surface and subsurface OEW hazards, distance to occupied buildings, and the number and types of buildings within a 2-mile radius. Therefore, the risk evaluation findings indicate that further action is warranted.

3.2 THREATS TO THE ENVIRONMENT

The following parts of NCP-defined threats [40 CFR, Part 300.41 5(b)(2)] apply to the conditions at IR Site 2:

i. "Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants." Erosion could uncover OEW which could potentially expose human and ecological receptors.

v. "Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released." Rainfall and surface runoff could expose OEW by eroding the surface soils.

vi. "Threat of fire or explosion." There is a threat of fire and explosion from the OEW presumed to be within the Possible OEW Burial Site.

vii. "The availability of other appropriate federal or state response mechanisms to respond to the release." There are no other federal or state response mechanisms that could respond to a release or explosion.

Environmental receptors that inhabit IR Site 2 or the surrounding area may be impacted if an explosion occurs or if any response activity takes place to address ordnance items still present at the site. However, because the planned action provides comparable levels of protection to both human and environmental receptors, no ecological criteria are included in the evaluation of risk to the environment.

4.0 ENDANGERMENT DETERMINATION

Risk assessment results, documented in Sections 3.1 and 3.2 and presented in the Risk Assessment Procedures for Ordnance and Explosives Sites worksheet (Appendix B), and information contained in the Administrative Record demonstrate that current conditions at IR Site 2 present a threat to public health, public welfare, or the environment and warrant the conduct of a TCRA.

Explosive risks from ordnance items at IR Site 2, if not addressed by implementing the response action described in this AM, may present an imminent and/or substantial endangerment to public health, public welfare, or the environment. The probability of contacting live ordnance is considered remote, but cannot be ruled out. Therefore, the explosive risks from ordnance items at Possible OEW Burial Site present an imminent and/or substantial endangerment.

5.0 PROPOSED ACTIONS AND ESTIMATED COSTS

A summary of the proposed action, an evaluation of the different remedial alternatives that were considered, and applicable or relevant and appropriate federal and state requirements are discussed in this section.

5.1 PROPOSED ACTION

The proposed removal action consists of the removal of OEW in surface soils at the Possible OEW Burial Site. An OEW removal to a depth of 1 foot will be performed. After soil sifting and removal of ordnance, soils will be backfilled to their original location. The primary objective of the proposed action is to reduce risks from ordnance to humans and the environment to the extent required for the future land use. Prior to implementation of the removal action, a topographic survey, cutting the vegetation to a height of 4 inches, and an OEW investigation/ sweep will be conducted for the entire upland portion of IR Site 2. These activities will be handled in a manner consistent with federal, state, and local regulations.

OEW Removal Action

One foot of topsoil will be removed from the entire 2.5-acre Possible OEW Burial Site, which will meet established remediation depth requirements for wildlife refuges (DoD, 1999). UXO avoidance procedures will be followed as defined within Section 4.5.3 of the Draft Focused RI Work Plan (FWENC, 2002). The soil will be removed in 6-inch lifts, one grid at a time, in a 20-foot by 20-foot grid system. The soil will be screened to separate trash and debris for recycling and disposal. The screened soil will be used to backfill the excavation.

The removal action will be conducted as follows:

- UXO Technicians will sweep the planned bulldozer path across the grid using Vallon mine detectors (1600 series) set for operation in magnetic soils (program 4). Significant magnetic anomalies will be hand excavated to ensure they are not OEW items.
- When the path is completely swept, the bulldozer will remove soil from the path in 6-inch lifts (or less, depending on soil type). UXO Technicians will walk beside the bulldozer blade as it advances to verify that a consistent cut is being made and to monitor the cuttings for small OEW items if they are bladed up. If an OEW item is observed in the blade cuttings, the UXO Technicians will signal the bulldozer operator to stop and the item will be investigated. The Senior UXO Supervisor (SUXOS) will determine when the excavation can resume.
- As the bulldozer works through the lane, a furrow of topsoil will be produced on both sides of the bulldozer blade. UXO Technicians will use the magnetometers to check these furrows before they are excavated in the next bulldozer lane.

- This procedure will be repeated until the entire grid is excavated to a depth of 1 foot and repeated again in the adjacent grids until the entire Possible OEW Burial Site has been excavated.
- The excavated soil will be placed in stockpiles adjacent to the grids for later screening.
- A loader will transport the stockpiled soil to the screening plant which will be equipped with a ¾-inch by 3-inch screen. A UXO Technician will monitor the tailings and the debris retained on the screen. If any OEW is discovered in the tailings or debris stream, all work will stop, non-UXO personnel will leave the area, and the procedures established above will be followed.
- When the entire Possible OEW Burial Site is excavated, the tailings will be used to backfill the excavation site and the screened materials will be segregated for recycling or landfill disposal, as appropriate.
- A water truck will be used to wet the soil for dust mitigation, as required.
- Stakes, line levels or surveyors' transits will be used by FWENC UXO Technicians to re-survey the site following the excavation to verify that a uniform soil removal depth of 1 foot was achieved.

5.1.1 Contribution to Remedial Performance

The proposed action will significantly reduce risks to humans and the environment by removing and disposing of on-site OEW. Following implementation of the proposed action and other necessary remediation, the site will be transferred to the USFWS for use as a National Wildlife Refuge.

5.1.2 Descriptions of Alternative Technologies

The evaluation of remedial alternatives, included in Appendix C, describes the following alternatives that were considered prior to selection of the aforementioned proposed action: 1) engineering/institutional control and 2) removal of ordnance, excavation, and backfill. Based on the remedial alternative evaluation, the excavation, removal of ordnance, and backfill alternative was selected based on technical feasibility and effectiveness. Alternative 2 is the most reliable and effective measure for mitigation of health risks to human and ecological receptors posed by ordnance over the long term. The hazards to humans and ecological receptors would be reduced because ordnance would be removed from the site to a depth of 1 foot, which will meet established remediation depth requirements for wildlife refuges (DoD, 1999). In addition, Alternative 2 would allow for beneficial future land uses.

5.1.3 Engineering Evaluation/Cost Analysis

An engineering evaluation/cost analysis is not required for the TCRA.

5.1.4 Applicable or Relevant and Appropriate Requirements

This section identifies and evaluates potential federal and State of California applicable or relevant and appropriate requirements (ARARs) from the universe of regulations, requirements, and guidance and sets forth the DON determinations regarding those potential ARARs for each response action alternative retained for detailed analysis in this AM for IR Site 2 at Alameda Point.

5.1.4.1 Summary of CERCLA and NCP Requirements

Section 121(d) of the CERCLA of 1980 [CERCLA, 42 USC Section, 9621(d)], as amended, states that remedial actions at CERCLA sites must attain (or the decision document must justify the waiver of) any federal or more stringent state environmental standards, requirements, criteria, or limitations determined to be legally applicable or relevant and appropriate. Although Section 121(d) of CERCLA does not itself expressly require that CERCLA removal actions comply with ARARs, the EPA has promulgated a requirement in the NCP mandating that CERCLA removal actions ". . . shall, to the extent practicable considering the exigencies of the situation, attain ARARs under federal environmental or state environmental or facility siting laws" [40 CFR, Part 300.415(j)]. It is DON policy to follow this requirement. Certain specified waivers may be used for removal actions, as is the case with remedial actions.

Applicable requirements are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that specifically address the situation at a CERCLA site. The requirement is applicable if the jurisdictional prerequisites of the standard show a direct correspondence when objectively compared to the conditions at the site. An applicable federal requirement is an ARAR. An applicable state requirement is an ARAR only if it is more stringent than federal ARARs.

If the requirement is not legally applicable, then the requirement is evaluated to determine whether it is relevant and appropriate. Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that, while not applicable, address problems or situations similar to the circumstances of the proposed response action and are well suited to the conditions of the site (EPA, 1988a). A requirement must be determined to be both relevant and appropriate in order to be considered an ARAR.

The criteria for determining relevance and appropriateness are listed in 40 CFR, Part 300.400(g)(2) and include the following:

- the purpose of the requirement and the purpose of the CERCLA action
- medium regulated or affected by the requirement and the medium contaminated or affected at the CERCLA site

- substances regulated by the requirement and the substances found at the CERCLA site
- any variances, waivers, or exemptions of the requirement and their availability for the circumstances at the CERCLA site
- the type of place regulated and the type of place affected by the release or CERCLA action
- the type and size of structure or facility regulated and the type and size of structure or facility affected by the release or contemplated by the CERCLA action
- any consideration of use or potential use of affected resources in the requirement and the use or potential use of the affected resources at the CERCLA site

According to CERCLA ARARs guidance (EPA, 1988a), a requirement may be "applicable" or "relevant and appropriate," but not both. Identification of ARARs must be done on a site-specific basis and involve a two-part analysis: first, a determination whether a given requirement is applicable; then, if it is not applicable, a determination whether it is nevertheless both relevant and appropriate. It is important to explain that some regulations may be applicable or, if not applicable, may still be relevant and appropriate. When the analysis determines that a requirement is both relevant and appropriate, such a requirement must be complied with to the same degree as if it were applicable (EPA, 1988a).

To qualify as a state ARAR under CERCLA and the NCP, a state requirement must be:

- An environmental or facility siting law
- Promulgated (of general applicability and legally enforceable) standard
- Substantive (not procedural or administrative)
- More stringent than the federal requirement
- Identified in a timely manner
- Consistently applied

To constitute an ARAR, a requirement must be substantive. Therefore, only the substantive provisions of requirements identified as ARARs in this analysis are considered to be ARARs. Permits are considered to be procedural or administrative requirements. Provisions of generally relevant federal and state statutes and regulations that were determined to be procedural or nonenvironmental, including permit requirements, are not considered to be ARARs. CERCLA 121(e)(1) and 42 USC, Section 9621(e)(1) states that "No Federal, State, or local permit shall be required for the portion of any removal or remedial action conducted entirely on-site, where such remedial action is selected and carried out in compliance with this section." The term *on-site* is defined for purposes of this ARARs discussion as "the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response action" (40 CFR, Part 300.5).

Nonpromulgated advisories or guidance issued by federal or state governments are not legally binding and do not have the status of ARARs. Such requirements may, however, be useful, and are "to be considered" (TBC). TBC requirements [40 CFR Part, 300.400(g)(3)] complement ARARs, but do not override them. They are useful for guiding decisions regarding cleanup levels or methodologies when regulatory standards are not available.

Pursuant to EPA guidance (EPA, 1988a), ARARs are generally divided into three categories: chemical-specific, location-specific, and action-specific requirements. This classification was developed to aid in the identification of ARARs; some ARARs do not fall precisely into one group or another. ARARs are identified on a site-by-site basis for remedial actions where CERCLA authority is the basis for cleanup. Chemical-specific ARARs are requirements that set limits on the concentration of specific hazardous substances, contaminants, and pollutants in the environment. Examples of this type of ARAR are ambient water quality criteria and drinking water standards. Location-specific ARARs are requirements that restrict certain types of activity based on site characteristics. These include restrictions on activity in wetlands, floodplains, and historic sites. The third type of ARAR includes action-specific requirements. These are technology-based restrictions that are triggered by the type of action under consideration. Examples of action-specific ARARs are Resource Conservation and Recovery Act (RCRA) regulations for waste treatment, storage, and disposal.

As the lead federal agency, the DON has primary responsibility for identifying federal ARARs at Alameda Point. Pursuant to the definition of the term *on-site* in 40 CFR, Part 300.5, the on-station areas are part of this action at IR Site 2. Regulatory requirements that apply to off-site actions are not ARARs. Off-site actions (for examples, off-site disposal) are required to comply with applicable requirements only and are not required to comply with relevant and appropriate requirements identified as ARARs for on-site actions. Identification of potential state ARARs was initiated through requests of the DON that the California Environmental Protection Agency (Cal/EPA) DTSC identify potential state ARARs. Federal and state ARARs that have been identified for the TCRA at IR Site 2 are discussed in this section.

5.1.4.2 Methodology Description

The process of identifying and evaluating potential federal and state ARARs is described in this subsection.

General

As the lead federal agency, the DON has primary responsibility for identification of federal ARARs for IR Site 2. In preparing this ARARs analysis, the DON undertook the following measures, consistent with CERCLA and the NCP:

- Identified federal ARARs for each response action alternative addressed in the AM, taking into account site-specific information for IR Site 2

- Reviewed potential state ARARs identified by the state to determine whether they satisfy CERCLA and NCP criteria that must be met in order to constitute state ARARs
- Evaluated and compared federal ARARs and their state counterparts to determine whether state ARARs are more stringent than the federal ARARs or are in addition to the federally required actions
- Reached a conclusion as to which federal and state ARARs are the most stringent and/or "controlling" ARARs for each alternative

Identifying and Evaluating Federal ARARs

The DON is responsible for identifying federal ARARs as the lead federal agency under CERCLA and the NCP. The final determination of federal ARARs will be made when the DON issues the AM. The federal government implements a number of federal environmental statutes that are the source of potential federal ARARs, either in the form of the statutes or regulations promulgated thereunder. Examples include the RCRA, the Clean Water Act, the Safe Drinking Water Act, the Toxic Substances Control Act, and their implementing regulations.

The proposed response action and alternatives were reviewed against federal ARARs, including but not limited to those set forth at 55 Federal Register 8764–8765 (1990), in order to determine if they were applicable or relevant and appropriate utilizing the CERCLA and NCP criteria and procedures for ARARs identification by lead federal agencies.

Identifying and Evaluating State ARARs

The process of identifying and evaluating potential state ARARs by the state and the DON is described in this subsection. As indicated previously, a state requirement must be a state environmental or facility siting law, substantive, promulgated, applicable, identified in a timely manner, and consistently applied in order to qualify as a potential state ARAR. A state requirement must be applicable or relevant and appropriate in accordance with 40 CFR, Part 300.400(g)(2). After a state requirement meets all the above conditions, it must be compared with federal ARARs for stringency. If the state requirement is not more stringent than a federal ARAR, it does not qualify as an ARAR.

Solicitation of State ARARS Under NCP

EPA guidance (EPA, 1988b) recommends that the lead federal agency consult with the state when identifying state ARARs for remedial actions. In essence, the CERCLA/NCP requirements at 40 CFR, Part 300.515 for remedial actions provide that the lead federal agency request that the state identify chemical- and location-specific state ARARs upon completion of site characterization. The requirements also provide that the lead federal agency request identification of all categories of state ARARs (chemical-, location-, and action-specific) upon completion of identification of remedial alternatives for detailed analysis. The state must respond

within 30 days of receipt of the lead federal agency requests. The remainder of this subsection documents the DON's efforts to date to identify and evaluate state ARARs.

The DON followed the procedures of the process set forth in 40 CFR, Part 300.515 and the Federal Facilities Agreement (FFA) for remedial actions in seeking state assistance in identifying state ARARs.

Chronology of Efforts To Identify State ARARS

Correspondence from the DON to the appropriate state agency requesting assistance in identifying state ARARs for IR Site 2 has been included in Appendix A, Administrative Record. The Administrative Record documents DON correspondence and submittals to the applicable regulatory agencies. The Administrative Record, listed on Page 13 of 28 from Appendix A, documents a letter submittal to the DTSC under Unit Identification Code (UIC) No/Rec. No N00236/001458, with the record date of October 2, 1997.

5.1.4.3 Other General Issues

General issues identified during the evaluation of ARARs for the TCRA at IR Site 2 are discussed in the following subsections.

General Approach to Requirements of the Federal Resource Conservation and Recovery Act

The RCRA is a federal statute passed in 1976 to meet four goals: the protection of human health and the environment, the reduction of waste, the conservation of energy and natural resources, and the elimination of the generation of hazardous waste as expeditiously as possible. The Hazardous and Solid Waste Amendment (HSWA) of 1984 significantly expanded the scope of RCRA by adding new corrective action requirements, land disposal restrictions, and technical requirements. RCRA, as amended, contains several provisions that are potential ARARs for CERCLA sites.

Substantive RCRA requirements are applicable to response actions on CERCLA sites if the waste is a RCRA hazardous waste, and either:

- the waste was initially treated, stored, or disposed after the effective date of the particular RCRA requirement or
- the activity at the CERCLA site constitutes treatment, storage, or disposal, as defined by RCRA (EPA, 1988a).

The preamble to the NCP indicates that state regulations that are components of a federally authorized or delegated state program are generally considered federal requirements and potential federal ARARs for the purposes of ARARs analysis [55 Federal Register 8666, 8742

(1990)]. The State of California initially received approval for its base RCRA hazardous waste management program on July 23, 1992 [57 Federal Register 32726 (1992)], and recently received reauthorization. The State of California "Environmental Health Standards for the Management of Hazardous Waste," set forth in Title 22 California Code of Regulations (CCR), Division 4.5, were approved by the EPA as a component of the federally authorized State of California RCRA program.

The regulations of Title 22 CCR, Division 4.5 are therefore, a source of potential federal ARARs for CERCLA response actions. The exception is when a state regulation is "either broader in scope or more stringent" than the corresponding federal RCRA regulations. In that case, such regulations are not considered part of the federally authorized program or potential federal ARARs. Instead, they are purely state law requirements and potential state ARARs.

The EPA July 23, 1992, notice approving the State of California RCRA program [57 Federal Register 32726 (1992)] specifically indicated that the state regulations addressed certain non-RCRA, state-regulated hazardous wastes that fell outside the scope of federal RCRA requirements. Title 22 CCR, Division 4.5 requirements would be potential state ARARs for such non-RCRA, state-regulated wastes.

5.1.4.4 Site Specific ARARs

Neither military munitions nor UXO are, as a class, designated as CERCLA hazardous substances. However, the DON is addressing ordnance items at IR Site 2 through the CERCLA framework, which is consistent with DoD policy. DoD's DERP provides for cleanup of ordnance items at formerly used defense sites following the CERCLA process.

Addressing the unique problems associated with UXO on military installations requires an approach that modifies the one taken under the CERCLA response and RCRA corrective action programs. The most significant reason for this difference is the absolute need to minimize explosives safety risks in planning, conducting, and implementing response actions. This is because the acute hazards associated with military munitions (especially UXO) are the primary factors driving the scope, sequence, and types of actions that are possible on the impacted sites. These concerns are unique to military installations in that most actions on CERCLA response or RCRA corrective action sites do not need to consider an explosion hazard posed by the presence of munitions or explosives. Response actions to address potentially live ordnance items require a different approach to balance the risks and impacts of addressing the military munitions and/or UXO with the risks of inaction. Minimizing explosives safety risks while achieving the proper balance between these competing concerns is the goal of this removal action. Therefore, prior to commencement of the TCRA activities, an Explosives Safety Remediation Plan (ESRP) will be prepared in accordance with the DoD's guidance entitled *DOD Ammunition and Explosives Safety Standards*, dated July 1999.

5.1.4.5 Chemical-Specific ARARs

Chemical-specific ARARs are generally health- or risk-based numerical values or methodologies applied to site-specific conditions that result in the establishment of a cleanup level. Many potential ARARs associated with particular response alternatives (such as closure or discharge) can be characterized as action-specific, but include numerical values or methodologies to establish them so they fit in both categories (chemical- and action-specific). The proposed TCRA does not involve groundwater, surface water, or soil. Therefore, there are no chemical-specific ARARs for these media.

Federal Chemical-Specific ARARs

At IR Site 2, the alternative to sift ordnance items from fill soils would produce solid wastes, including potential OEW, OEW scrap, and buried debris. Therefore, certain substantive requirements of RCRA are ARARs for handling the waste material from IR Site 2.

RCRA Hazardous Waste Determination. Comparing the site waste to the definition of RCRA hazardous waste can make the determination of whether a waste is a RCRA hazardous waste. The RCRA requirements at Title 22 CCR, Sections 66261.21, 66261.22(a)(I), 66261.23, 66261.24(a)(I), and 66261.100 are applicable ARARs because they define RCRA hazardous waste. Available information regarding the waste disposed of at IR Site 2, including OEW, solid wastes, scrap metal, and buried debris, indicates that this waste material is not considered a RCRA listed waste. However, UXO and other OEW materials may be considered a RCRA characteristic or D003 (reactive) hazardous waste. Under Title 22 CCR, Section 66261.23 (a), recovered OEW is considered RCRA hazardous waste.

IR Site 2 is considered an area of contamination (AOC) under the CERCLA program as administered by the EPA and the Cal/EPA DTSC. The designation of IR Site 2 as an AOC allows the placement of material generated during excavations and soil investigations within the same AOC without triggering land disposal restrictions. Therefore, screened soil will be stockpiled and used as backfill. The backfilled area will be re-graded into the landfill, and the screened backfill soil will not be characterized for chemical constituents or hazardous waste characteristics.

Military Munitions Rule. The Military Munitions Rule identifies when conventional and chemical military munitions become a hazardous waste under RCRA. It also provides for safe storage and transport of such waste. The requirements for military munitions have been consolidated into 40 CFR, Part 266, Subpart M with appropriate references to other requirements (such as, treatment and disposal). These requirements are applicable federal ARARs for the proposed removal action alternatives at IR Site 2. The state has not yet adopted the federal RCRA Military Munitions Rule and continues to regulate ordnance items that meet the definition of "hazardous waste" under Title 22 CCR hazardous waste regulations.

Solid Waste Landfill Closure Requirements. The requirements found in 40 CFR, Part 258, Part F apply to solid waste disposal facilities. Because IR Site 2 did not receive wastes after the effective date of these requirements (October 9, 1991), these requirements would not be applicable. The substantive portions of these requirements could be considered potentially relevant and appropriate. However, it is important to note that the intent of the TCRA is not to obtain clean closure, but to simply remove the hazards associated with the ordnance items potentially containing OEW in the top 1 foot of soil.

State Chemical-Specific ARARs

RCRA Requirements. Under the California RCRA Program, waste can be classified as non-RCRA state-only hazardous waste if it meets specified conditions, as defined in Title 22 CCR, Sections 66261.22(a)(3) and (4), 66261.24(a)(2) through (a)(8), 66261.101, and 66261.3(a)(2)(C) or 66261.3(a)(2)(F). These requirements have been identified as potentially applicable because a determination will be made as to whether wastes generated may be classified as non-RCRA wastes.

27 CCR, Division 2, Subdivision 1. 27 CCR, Sections 20210 and 20220, are state definitions for designated waste and non-hazardous waste, respectively. These may be potentially applicable ARARs for waste that meets these definitions. These classifications determine state classification and siting requirements for discharging waste to land. Section 20230(a) defines inert waste as waste "that does not contain hazardous waste or soluble pollutants at concentrations in excess of applicable water quality objectives, and does not contain significant quantities of decomposable waste." Section 20230(b) states that "inert wastes do not need to be discharged at classified waste management units." Sections 20230(a) and (b) may be applicable state ARARs for wastethat meets the definition of inert waste.

Bay Area Air Quality Management District (BAAQMD). There are no major sources of air emissions expected as part of the proposed removal action alternatives. However, dust-control measures required by BAAQMD will be implemented as necessary to prevent air emissions.

5.1.4.6 Location-Specific ARARs

Location-specific ARARs restrict certain types of activities based on site characteristics. Location-specific ARARs discussed below are due to the proximity of IR Site 2 to wetlands, coastal areas, and associated biological resources.

Federal Location-Specific ARARs

Wetlands Protection and Floodplains Management ARARs. IR Site 2 contains wetland areas and surface water bodies. Therefore, Executive Order No. 11990, Protection of Wetlands [40 CFR, Part 6.302(a)], Executive Order No. 11988, Floodplain Management [40 CFR, Part 6.302(b)], and the Clean Water Act, Section 404, 33 USC, Section 1344 are ARARs for this

response action. The proposed investigation and removal actions do comply with the substantive portions of the Clean Water Act pursuant to Section 404. Specific mitigation measures to be taken to minimize potential impacts to the wetland will be presented in Section 6.0 Environmental Protection Plan (EPP) of the *Draft Focused RI Work Plan* (FWENC, 2002).

Migratory Bird Treaty Act of 1918 [16 USC, 703 through 712; Chapter 128]. This act makes it unlawful to pursue, hunt, kill, capture, possess, buy, sell, purchase, or barter any migratory bird, including the feathers or other parts, nests, eggs, or migratory bird products. Several species of migratory birds occupy IR Site 2. Therefore, this act is a relevant and appropriate ARAR. Specific mitigation measures to be taken to minimize potential impacts to migratory birds are presented in the Environmental Protection Plan (FWENC, 2002) prepared for this project.

National Wildlife Refuge System Administration Act [(NWRSA) - Title 16, Chapter 5A, Subchapter III, Section 668d]. Certain wildlife species could potentially occur at IR Site 2 based on their presence at similar areas in Alameda County. They include winter-run chinook salmon, tidewater goby, California brown pelican, California clapper rail, salt marsh common yellowthroat, Alameda song sparrow, western snowy plover, California least tern, American peregrine falcon, stellar sea lion, and salt marsh harvest mouse (FWENC, 2002). None of these species have been observed at IR Site 2 in recent years, but they have been observed on lands and waters near the site. The NWRSA is relevant and appropriate because the site is proposed as a National Wildlife Refuge. The NWRSA prohibits the disturbing, injuring, cutting, burning, removing, destroying, or possessing of any real or personal property of the U.S., including natural growth in any area of the system, or take or possess any fish, bird, mammal, or other wild vertebrate or invertebrate animals or part or nest or egg thereof within any such area, or enter, use, or otherwise occupy any such area for any purpose, unless such activities are performed by persons authorized to manage such area, or unless such activities are permitted with authorization from refuge managers, or by express provision of the law. Planned TCRA activities at the site are authorized and their impact on the existing terrestrial wildlife and the habitat will be minimal. There are no work activities to be performed offshore of IR Site 2 as part of this TCRA.

Endangered Species Act of 1973 (16 USC, Sections 1531 et seq.). Endangered species could occur on IR Site 2, but are not likely to inhabit the site. Planned TCRA activities will be planned to minimize impacts to wildlife that exists on the site. Intrusive impacts will be carefully located and timed so as to avoid impacts on threatened and endangered species. Specific mitigation measures to be taken to minimize potential impacts to endangered species are presented in the EPP prepared for this project.

State Location-Specific ARARs

California Coastal Act of 1976 – The Public Resources Code (California Public Resources Code, Sections 30000 through 30900) and 14 CCR, Sections, 13001 through 13666.4 regulate activities associated with development to control direct significant impacts on coastal waters and to protect state and national interests in California coastal resources. The California Coastal Act policies set forth in the act constitute the standards used by the California Coastal Commission in its coastal development permit decisions and for the review of local coastal programs. These policies contain the following substantive requirements: protection and expansion of public access to the shoreline and recreation opportunities (California Public Resources Code, Sections 30210 through 30224), protection, enhancement, and restoration of environmentally sensitive habitats including intertidal and nearshore waters, wetlands, bays and estuaries, riparian habitat, grasslands, streams, lakes, and habitat for rare or endangered plants or animals (California Public Resources Code, Sections 30230 through 30240), protection of productive agricultural lands, commercial fisheries, and archaeological resources (California Public Resources Code, Sections 30234, 30241 through 30244), protection of the scenic beauty of coastal landscapes (California Public Resources Code, Section 30251), and provisions for expansion, in an environmentally sound manner, of existing industrial ports and electricity-generating power plants (California Public Resources Code, Section 30264).

It is noted that the Oakland Inner Harbor, which connects to the San Francisco Bay, is located adjacent to the site. Since the site is near a coastal area, the California Coastal Commission was consulted to determine the boundaries of the coastal zone. Since the TCRA area is greater than 100 feet from the coast high tide line, the project is not affected by any coastal zoning restrictions.

California Fish and Game Code (Sections 1600, 1601, 1603, 2014, 2080, 3005, and 5650). Regulations that apply to actions that impact wetlands, responsibility and damages for negligently destroying wildlife, the illegal taking of endangered/threatened species, other birds, and mammals, and the discharge or release of hazardous materials into California waters are all relevant and appropriate ARARs. The EPP presents mitigation measures to be implemented to prevent impacts to sensitive habitats and listed species.

California Endangered Species Act. Endangered species could occur on IR Site 2, but are not likely to inhabit the site. Planned TCRA activities will be planned to minimize impacts to wildlife that exists on the site. Intrusive impacts will be carefully located and timed so as to avoid impacts on threatened and endangered species. Specific mitigation measures to be taken to minimize potential impacts to endangered species are presented in the EPP prepared for this project.

5.1.4.7 Action-Specific ARARs

OEW materials will be managed as a RCRA hazardous waste in accordance with the following provisions:

Department of Defense and DON Publications

Action-specific ARARs and TBC requirements focus primarily on the management of OEW as a reactive (D003) hazardous waste. Because the TCRA project is being conducted on a BRAC site, DoD and DON publications govern the handling, storage, transportation, clearance, and disposal requirements for OEW. They broadly apply and are applicable to all OEW activities on federal property as follows:

- ***U. S. Navy Manual Naval Sea Systems Command (NAVSEA) OP-5.*** Ammunition and Explosives Ashore Safety Regulations for Handling, Storing, Production, Renovation and Shipping
- ***DoD Instruction 4145.26M.*** *DoD Contractor's Safety Manual for Ammunition and Explosives*
- ***DoD 6055.9-STD.*** *DoD Ammunition and Explosives Safety Standards*

RCRA and California Hazardous Waste Control Act ARARs/TBCs

Hazardous wastes managed in accordance with the substantive requirements of the RCRA and California Hazardous Waste Laws are likely ARARs as follows:

- If, based on the hazardous waste determination described under the federal chemical-specific ARARs discussion, wastes are determined to be hazardous, substantive requirements of 22 CCR, Section 66262.34 (pertaining to hazardous waste accumulation) will be applicable.
- Hazardous waste generator requirements (22 CCR, Section 66262).
- Container storage (22 CCR, Sections 66264.171 through 66264.178).
- Transportation requirements (40 CFR, Part 263; 22 CCR, Section 66263).
- On-site OEW storage/hazardous waste stockpile/storage area design and operation requirements (40 CFR, Part 262.250).
- Detonation of ordnance items by base explosive ordnance disposal (EOD) personnel or UXO-trained specialists may be performed as part of the proposed TCRA. Therefore, the substantive requirements of 22 CCR, Section 66265.382 pertaining to the open burning of waste explosives are relevant and appropriate.

Other Federal/California Action-Specific ARARs

- **Military Munitions Rule.** The Military Munitions Rule identifies when conventional and chemical military munitions become a hazardous waste under RCRA. It also provides for safe storage and transport of such waste. The requirements for military munitions have been consolidated into 40 CFR, Part 266, Subpart M with appropriate references to other requirements (for example, treatment and disposal). These requirements are applicable federal ARARs for the proposed TCRA at IR Site 2. The state has not yet adopted the federal RCRA Military Munitions Rule and continues to regulate ordnance items that meet the definition of "hazardous waste" under Title 22 CCR hazardous waste regulations.

- **Air Quality Standards**: Fugitive dust may be generated during the excavation and handling of the soil. The pertinent substantive provisions of BAAQMD Regulation 2 are considered applicable for these activities. In accordance with these regulations, reasonably available control measures will be applied during the TCRA to prevent fugitive dust emissions.

- **California Health and Safety Code.** Certain sections of the law apply to the present and future use of land following transfer of property from the DON to a nonfederal agency. Substantive requirements of Ca-HSC, 25202.5, 25232(b)(1)(A) through (E), and 25233(c) while not applicable, are relevant and appropriate ARARs since the site is transferring to a federal agency.

5.1.4.8 Community Relation Activities

As the lead agency for the environmental IRP activities at Alameda Point, the DON is responsible for conducting community relation activities for the Possible OEW Burial Site within IR Site 2.

In accordance with 40 CFR, Part 300.415(n)(2) for CERCLA actions where, based on the site evaluation, the lead agency determines that a removal is appropriate and that less than 6 months exist before on-site removal activity must begin, the lead agency will: 1) publish a notice of availability of the Administrative Record file established in a major local newspaper of general circulation within 60 days of initiation of on-site removal activity; 2) provide a public comment period as appropriate, of not less than 30 days from the time the Administrative Record file is made available for public inspection; and 3) prepare a written response to significant comments. In addition to these actions, the proposed project activities will be discussed with the base RAB, which consists of interested community members and various responsible agencies.

The administrative file for the project is located at the public repository for the Alameda Point activities, which is maintained at the Alameda Main Public Library and Alameda Point, Former NAS Alameda. The complete Administrative Record is located the DON, Southwest Division, Naval Facilities Engineering Command headquarters at 1220 Pacific Highway, San Diego, California.

5.1.5 Project Schedule

The removal action and field preparation activities are scheduled for January 2002 to April 2002. The project closeout is schedule to occur by December 2002. The general project schedule is attached as Appendix D.

5.2 ESTIMATED COSTS

A cost analysis has been conducted for the removal action and includes both direct and indirect capital costs. This cost estimate is preliminary in nature and expected to be within ± 25 percent.

Direct costs include:

- Field labor costs
- Equipment and material costs
- Transport and disposal costs

Indirect costs include:

- Project management
- Engineering design
- Overhead

Other costs:

- Contingency
- Award fee

The cost analysis is presented in Table 5-1. Total cost for the removal action is estimated to be

6.0 NO ACTION OR DELAYED ACTION SCENARIO

If action should be delayed or not taken, the potential for exposure of human and environmental receptors to ordnance items in IR Site 2 soils will continue. The probability of contacting live ordnance is considered remote, but cannot be ruled out.

7.0 PUBLIC INVOLVEMENT

The AM for the proposed TCRA will be discussed during community meetings and with the RAB. In compliance with the requirements of 40 CFR, Parts 300.415(n) (2) and 300.820 (b), a public notice will be issued that describes the proposed TCRA and the availability for review of the project Administrative Record and this AM.

8.0 OUTSTANDING POLICY ISSUES

There are no outstanding policy issues with regard to the proposed removal action.

9.0 RECOMMENDATIONS AND SIGNATURES

This AM was prepared in accordance with current EPA and DON guidance documents for TCRAs under CERCLA. The purpose of this AM was to identify and analyze removal actions to address ordnance items within the fill soil at the IR Site 2 TCRA area, Alameda Point, Alameda. Three alternatives were identified and evaluated (Appendix C) as follows:

- Alternative 1 – no action
- Alternative 2 – engineering/institutional controls
- Alternative 3 – excavation, removal of ordnance, and backfill

As detailed in Section 3.0 of this document, ordnance items at the Possible OEW Burial Site at Alameda Point, Alameda, California, posed a threat that met the NCP criteria for a TCRA. The DON intends to conduct excavation, removal of ordnance, and backfill (Alternative 3) since this alternative would greatly reduce risks to humans and the environment by removing on-site ordnance items located within the top 1 foot of soil. Following implementation of this alternative, the land would be meet DoD requirements for use as a wildlife refuge.

Base Realignment and
Closure Environmental
Coordinator:

_____ _____

Michael E. McClelland, P.E. Date
Southwest Division
Naval Facilities Engineering Command

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TABLES

TABLE 5-1

COST ESTIMATE FOR PROPOSED ACTION[1,2,3]

Item		Cost
Project and construction management and procurement	$	292,000
Community relations/regulatory interaction	$	26,000
ESRP[4] document and work plans	$	53,700
Project infrastructure	$	268,000
Mobilization/demobilization	$	22,500
Surveys	$	46,100
Earthworks	$	187,200
Visual surface sweep	$	73,700
Ordnance/explosives off-site destruction transportation to DoD[5] factory	$	14,000
Subtotal Costs	**$**	**983,200**
Contingency (20%)	**$**	**196,600**
Fee (10%)	**$**	**98,300**
ESTIMATED TOTAL COSTS	**$**	**1,278,200**

Notes:

1 Costs include indirect costs where applicable
2 Soil excavated to depth of 1 foot and the excavation backfilled with original soil
3 Accuracy approximately plus or minus 25%
4 ESRP – Explosives Safety Remediation Plan
5 DoD – U.S. Department of Defense

FIGURES

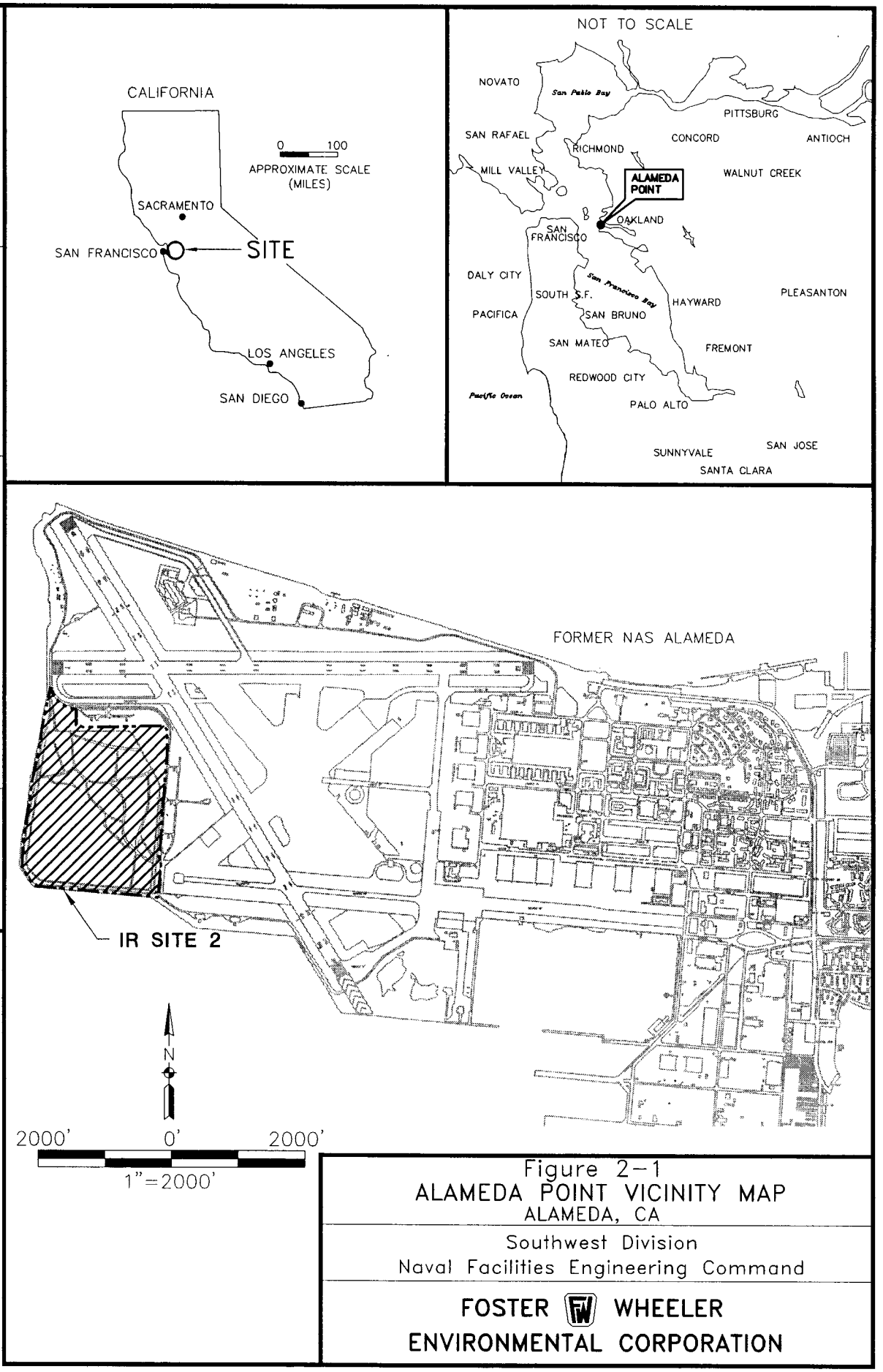

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Figure 2-1
ALAMEDA POINT VICINITY MAP
ALAMEDA, CA

Southwest Division
Naval Facilities Engineering Command

FOSTER WHEELER
ENVIRONMENTAL CORPORATION

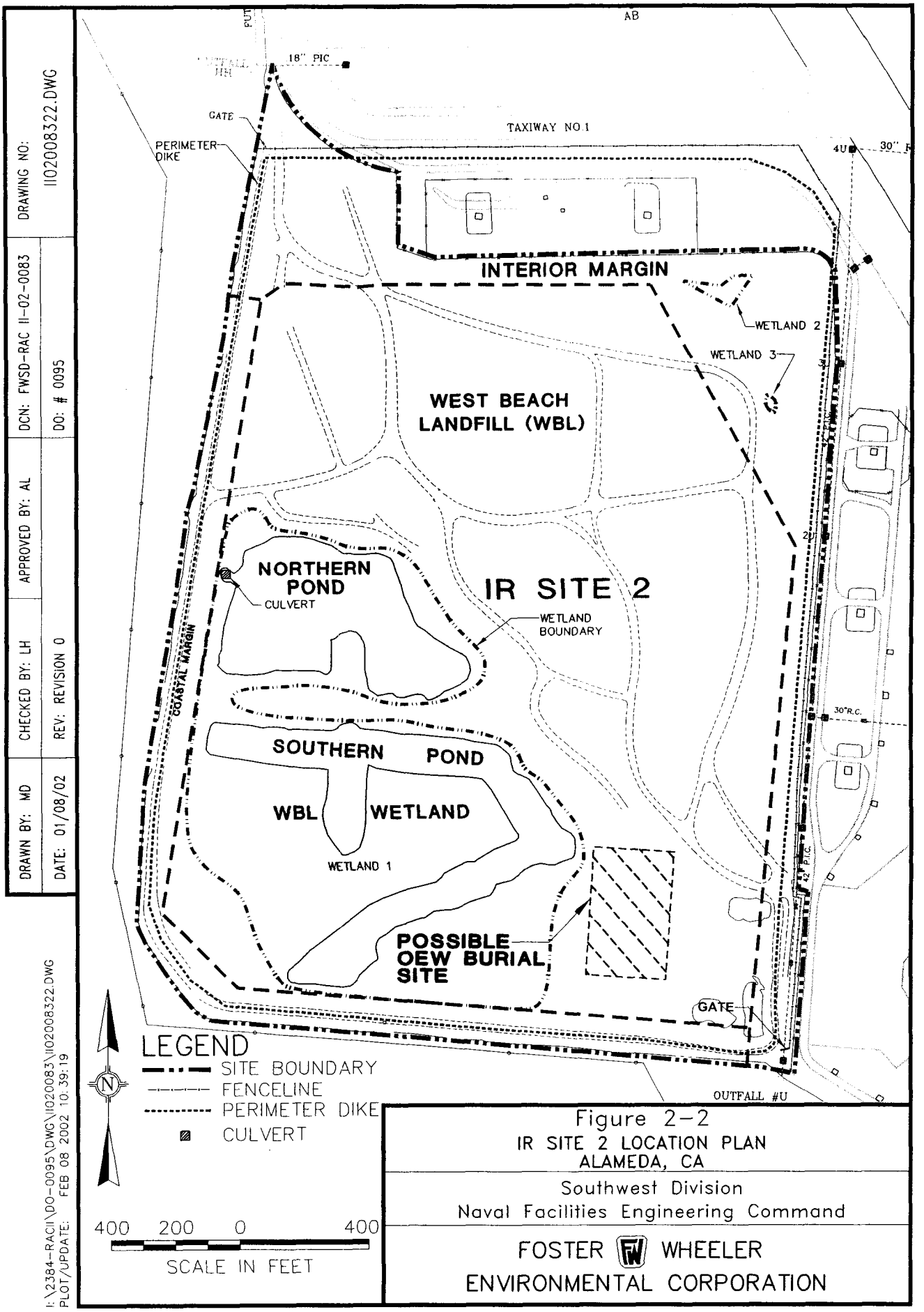

Figure 2-2
IR SITE 2 LOCATION PLAN
ALAMEDA, CA

Southwest Division
Naval Facilities Engineering Command

FOSTER WHEELER ENVIRONMENTAL CORPORATION

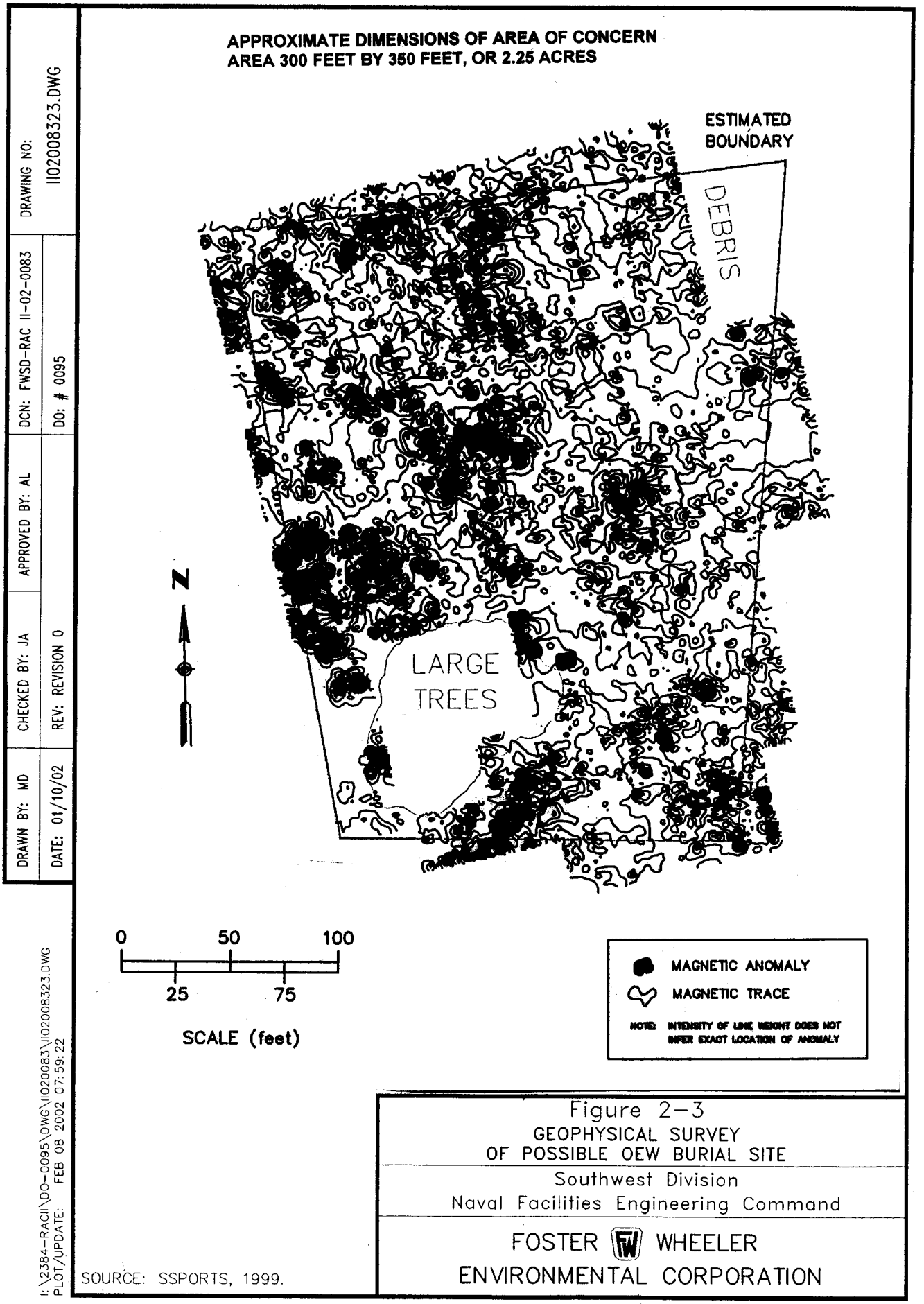

Figure 2-3
GEOPHYSICAL SURVEY
OF POSSIBLE OEW BURIAL SITE

Southwest Division
Naval Facilities Engineering Command

FOSTER WHEELER
ENVIRONMENTAL CORPORATION

APPENDIX A

INDEX FOR ADMINISTRATIVE RECORDS FOR ALAMEDA POINT, IR SITE 2

DRAFT ADMINISTRATIVE RECORD FILE INDEX - UPDATE (SORTED BY RECORD DATE / RECORD NUMBER)

SITE 2

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject/Comments	Classification	Keywords	Sites	Location Box No.
N00236 / 000192 RPT NONE 0000	11-24-1999 **05-30-1980** NONE 00.0	HARDING LAWSON	DRAFT SANITARY LANDFILL CLOSURE PLAN	INFO REPOSITORY	LANDFILL	002	IRON MOUNTAIN 45359715
N00236 / 000173 LTR NONE 0000	11-24-1999 **07-11-1980** NONE 00.0	RWQCB	COMMENTS ON THE JUNE 13, 1980 MEETING CONCERNING WEST BEACH LANDFILL	INFO REPOSITORY	LANDFILL	002	IRON MOUNTAIN 45359715
N00236 / 000101 LTR NONE 0000	11-24-1999 **06-10-1981** NONE 00.0	RWQCB	COMMENTS ON THE CLOSURE PLAN FOR WEST BEACH LANDFILL	INFO REPOSITORY	LANDFILL	002	IRON MOUNTAIN 45359714
N00236 / 000174 CMNT NONE 0000	11-24-1999 **09-06-1982** NONE 00.0	RWQCB	COMMENTS BY STATE BOARD GEOLOGIST ON WEST BEACH LANDFILL CLOSURE PLAN	INFO REPOSITORY	LANDFILL	002	IRON MOUNTAIN 45359715
N00236 / 000184 LTR NONE 0000	11-24-1999 **05-16-1983** NONE 00.0	NAVY	MCON PROJECT P-183, SOLID WASTE DISPOSAL SYSTEM - WEST BEACH LANDFILL	INFO REPOSITORY	LANDFILL	002	IRON MOUNTAIN 45359715

This Administrative Record (AR) Index includes references to documents which cite bibliography sources. These bibliographic citations are considered to be part of this AR but may not be cited separately in the index.

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject/Comments	Classification	Keywords	Sites	Location Box No.
N00236 / 000191 LTR NONE 0008	11-24-1999 **05-17-1983** NONE 00.0	NAVY RICHMOND, CAPT D D DHS	SUBMISSION OF INITIAL ASSESSMENT STUDY (IAS) AND SAMPLING ANALYSIS FOR 129 PRIORITY POLLUTANTS AT WEST BEACH LANDFILL. ***COMMENTS: SEE REPORT 198***	INFO REPOSITORY	IAS LANDFILL NACIP	002	IRON MOUNTAIN 45359715
N00236 / 000125 LTR NONE 0000	11-24-1999 **08-19-1983** NONE 00.0	RWQCB	ISSUANCE OF TENTATIVE ORDER CLOSURE REQUIREMENTS FOR WEST BEACH LANDFILL	INFO REPOSITORY	LANDFILL	002	IRON MOUNTAIN 45359714
N00236 / 000109 LTR NONE 0000	11-24-1999 **09-08-1983** NONE 00.0	NAVY	SUBMISSION OF LANDFILL CLOSURE APPLICATION FOR WEST BEACH LANDFILL	INFO REPOSITORY	LANDFILL	002	IRON MOUNTAIN 45359714
N00236 / 000107 LTR NONE 0000	11-24-1999 **09-20-1983** NONE 00.0	NAVY	PRELIMINARY REPORT OF CONFIRMATION STUDY FOR WEST BEACH LANDFILL	INFO REPOSITORY	LANDFILL	002	IRON MOUNTAIN 45359714
N00236 / 000126 LTR NONE 0000	11-24-1999 **09-28-1983** NONE 00.0	RWQCB	ISSUANCE OF ORDER NO. 83-35 - CLOSURE REQUIREMENTS FOR WEST BEACH LANDFILL	INFO REPOSITORY	LANDFILL	002	IRON MOUNTAIN 45359714
N00236 / 000179 LTR NONE 0000	11-24-1999 **03-29-1984** NONE 00.0	NAVY	SUBMISSION OF CONFIRMATION STUDY FOR WEST BEACH LANDFILL	INFO REPOSITORY	LANDFILL	002	IRON MOUNTAIN 45359715

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject/Comments	Classification	Keywords	Sites	Location Box No.
N00236 / 000186 LTR NONE 0001	11-24-1999 **03-29-1984** NONE 00.0	NAVY RICHMOND, CAPT D USEPA YOUNG, MARVIN	SUBMISSION OF CONFIRMATION STUDY ON SANITARY LANDFILL	INFO REPOSITORY	LANDFILL NACIP	002	IRON MOUNTAIN 45359715
N00236 / 000116 LTR NONE 0000	11-24-1999 **06-06-1985** NONE 00.0	NAVY	SUBMISSION OF SEISMIC STABILITY STUDIES FOR WEST BEACH LANDFILL	INFO REPOSITORY	LANDFILL SEISMIC	002	IRON MOUNTAIN 45359714
N00236 / 000122 LTR NONE 0000	11-24-1999 **11-26-1985** NONE 00.0	NAVY	PROVIDING UPDATE ON WEST BEACH LANDFILL CLOSURE - COVER MATERIAL	INFO REPOSITORY	COVER LANDFILL	002	IRON MOUNTAIN 45359714
N00236 / 000121 LTR NONE 0000	11-24-1999 **03-04-1986** NONE 00.0	NAVY	PROVIDING UPDATE ON WEST BEACH LANDFILL CLOSURE	INFO REPOSITORY	LANDFILL	002	IRON MOUNTAIN 45359714
N00236 / 000124 LTR NONE 0000	11-24-1999 **03-04-1986** NONE 00.0	RWQCB	REQUEST FOR INFO RELATED TO CLOSURE ORDER OF WEST BEACH LANDFILL	INFO REPOSITORY	LANDFILL	002	IRON MOUNTAIN 45359714
N00236 / 000183 LTR NONE 0000	11-24-1999 **03-27-1986** NONE 00.0	NAVY	RESPONSE TO RWQCB LETTER OF MARCH 4, 1986 RE: CLOSURE OF WEST BEACH LANDFILL	INFO REPOSITORY	LANDFILL	002	IRON MOUNTAIN 45359715

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject/Comments	Classification	Keywords	Sites	Location Box No.
N00236 / 000146 LTR NONE 0000	11-24-1999 **04-25-1986** NONE 00.0	NAVY	RESPONSE TO RWQCB LETTER OF MARCH 4, 1986 (NO. 124) RE: TIMELY COMPLETION OF 1 FOOT COVER ON WEST BEACH LANDFILL	INFO REPOSITORY	COVER LANDFILL	001 002	IRON MOUNTAIN 45359714
N00236 / 000131 LTR NONE 0000	11-24-1999 **06-11-1986** NONE 00.0	RWQCB	COMMENTS ON THE USE OF DREDGE SPOILS AS COVER AT WEST BEACH LANDFILL	INFO REPOSITORY	DREDGE LANDFILL	002	IRON MOUNTAIN 45359714
N00236 / 000132 LTR NONE 0000	11-24-1999 **10-01-1986** NONE 00.0	NAVY	SUBMISSION OF AERIAL SURVEY OF THE WEST BEACH LANDFILL	INFO REPOSITORY	AERIAL LANDFILL	002	IRON MOUNTAIN 45359714
N00236 / 000144 LTR NONE 0000	11-24-1999 **10-29-1986** NONE 00.0	NAVY	SUBMISSION OF INTERIM GRADING PLAN FOR POND PREVENTION AT WEST BEACH LANDFILL	INFO REPOSITORY	GRADING LANDFILL	002	IRON MOUNTAIN 45359714
N00236 / 000133 CMNT NONE 0000	11-24-1999 **11-14-1986** NONE 00.0	RWQCB	COMMENTS ON THE INTERIM GRADING PLAN FOR WEST BEACH LANDFILL	INFO REPOSITORY	GRADING LANDFILL	002	IRON MOUNTAIN 45359714
N00236 / 000181 LTR NONE 0000	11-24-1999 **11-26-1986** NONE 00.0	NAVY	RESPONSE TO RWQCB LETTER OF NOVEMBER 14, 1986 RE: POTENTIAL PONDING AT WEST BEACH LANDFILL	INFO REPOSITORY	LANDFILL	002	IRON MOUNTAIN 45359715

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject/Comments	Classification	Keywords	Sites	Location Box No.
N00236 / 000145 LTR NONE 0000	11-24-1999 **01-27-1987** NONE 00.0	NAVY	SUBMISSION OF AS-BUILT INTERIM GRADING PLAN FOR WEST BEACH LANDFILL	INFO REPOSITORY	GRADING LANDFILL	002	IRON MOUNTAIN 45359714
N00236 / 000141 LTR NONE 0000	11-24-1999 **06-11-1987** NONE 00.0	RWQCB	NOTIFICATION OF SWAT REQUIREMENT FOR WEST BEACH LANDFILL	ADMIN RECORD	LANDFILL SWAT	002	IRON MOUNTAIN 45359714
N00236 / 000103 LTR NONE 0000	11-24-1999 **05-03-1988** NONE 00.0	NAVY	REQUEST FOR JOINT SWAT FOR WEST BEACH AND 1943-1956 LANDFILLS	ADMIN RECORD	LANDFILL SWAT	001 002	IRON MOUNTAIN 45359714
N00236 / 000104 LTR NONE 0000	11-24-1999 **05-24-1988** NONE 00.0	RWQCB	APPROVAL OF JOINT SWAT FOR WEST BEACH AND 1943-1956 LANDFILLS	ADMIN RECORD	LANDFILL SWAT	001 002	IRON MOUNTAIN 45359714
N00236 / 000784 RPT NONE 0000	11-24-1999 **10-16-1989** NONE 00.0	SCS	MONITORING PLAN AIR QUALITY SOLID WASTE ASSESSMENT TEST (SWAT) WEST BEACH LANDFILL AND THE 1943 TO 1956 DISPOSAL AREA. ***COMMENTS: WEST BEACH LANDFILL***	INFO REPOSITORY	MONITORING SWAT	001 002	IRON MOUNTAIN 45359720
N00236 / 000481 LTR NONE 0000	11-24-1999 **04-11-1990** NONE 00.0	RWQCB	REQUEST FOR IMMEDIATE IMPLEMENTATION OF SWAT AT WEST BEACH LANDFILL AND 1943-1956 DISPOSAL AREA	ADMIN RECORD	LANDFILL SWAT	001 002	IRON MOUNTAIN 45359717

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject/Comments	Classification	Keywords	Sites	Location Box No.
N00236 / 000525 RPT NONE 0000	11-24-1999 **04-24-1990** NONE 00.0	CANONIE	MONITORING PLAN AIR QUALITY SOLID WASTE ASSESSMENT WEST BEACH LANDFILL AND THE 1943-1956 DISPOSAL AREA. ***COMMENTS: WEST BEACH LANDFILL***	INFO REPOSITORY	LANDFILL SWAT	001 002	IRON MOUNTAIN 45359718
N00236 / 000498 LTR NONE 0000	11-24-1999 **06-19-1990** NONE 00.0	NAVY	RESCHEDULING SWAT TEST AT WEST BEACH LANDFILL AND 1943-1956 LANDFILL	INFO REPOSITORY	LANDFILL SWAT	001 002	IRON MOUNTAIN 45359717
N00236 / 000791 RPT NONE 0000	11-24-1999 **12-01-1990** NONE 00.0	CANONIE	REVISED PHASE 1 ANALYTICAL RESULTS FOR SITES 1, 2, AND 13: 1943-1956 DISPOSAL AREA, WEST BEACH LANDFILL AND OIL REFINERY SITE RI/FS VOL 1 (ENCLOSURE 1)	REFERENCE	FS RI	001 002 013	IRON MOUNTAIN 45359721
N00236 / 000792 RPT NONE 0000	11-24-1999 **12-01-1990** NONE 00.0	CANONIE	REVISED PHASE 1 ANALYTICAL RESULTS FOR SITES 1, 2, AND 13: 1943-1956 DISPOSAL AREA, WEST BEACH LANDFILL AND OIL REFINERY SITE RI/FS VOL 2 (ENCLOSURE 2)	REFERENCE	FS RI	001 002 013	IRON MOUNTAIN 45359721
N00236 / 000881 RPT NONE 0000	11-24-1999 **01-24-1991** NONE 00.0	PRC	WELL DECOMMISSIONING PLAN: 1943-1956 DISPOSAL AREA AND WEST BEACH LANDFILL	INFO REPOSITORY	LANDFILL WELL	001 002	IRON MOUNTAIN 45359730
N00236 / 000544 CMNT NONE 0000	11-24-1999 **02-08-1991** NONE 00.0	DHS	COMMENTS ON THE WELL DECOMMISSIONING PLAN: 1943-1956 DISPOSAL AREA AND WEST BEACH LANDFILL	INFO REPOSITORY	LANDFILL WELL	001 002	IRON MOUNTAIN 45359718

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject/Comments	Classification	Keywords	Sites	Location Box No.
N00236 / 000513	11-24-1999 **03-12-1991**	PRC	WELL DECOMMISSIONING PLAN: 1943-1956 DISPOSAL AREA AND WEST BEACH LANDFILL. ***COMMENTS: WELLS:1943-1956 AREA***	INFO REPOSITORY	WELL	001 002	IRON MOUNTAIN 45359717
RPT NONE 0000	NONE 00.0						
N00236 / 000817	11-24-1999 **04-01-1991**	PRC	DRAFT WEST BEACH LANDFILL AND RUNWAY AREAS INTERIM DATA REPORT. ***COMMENTS: REMOVED***	REMOVED		002	IRON MOUNTAIN 45359725
RPT NONE 0000	NONE 00.0						
N00236 / 000552	11-24-1999 **04-23-1991**	NAVY	SUBMISSION OF HYDROGEOLOGY AND PROPOSED CHANGES ON SWAT FOR WEST BEACH LANDFILL. ***COMMENTS: SWAT CHANGES***	INFO REPOSITORY	HYDROGEOLOGIC LANDFILL SWAT	002	IRON MOUNTAIN 45359718
LTR NONE 0000	NONE 00.0						
N00236 / 000570	11-24-1999 **08-01-1991**	PRC	WEST BEACH LANDFILL AND RUNWAY AREAS INTERIM DATA REPORT. ***COMMENTS: W.BEACH LANDFILL AND***	ADMIN RECORD	LANDFILL	002	IRON MOUNTAIN 45359718
RPT NONE 0000	NONE 00.0						
N00236 / 000820	11-24-1999 **08-01-1991**	PRC	WEST BEACH LANDFILL AND RUNWAY AREAS INTERIM DATA REPORT	ADMIN RECORD		002	IRON MOUNTAIN 45359725
RPT NONE 0000	NONE 00.0						
N00236 / 000569	11-24-1999 **08-27-1991**	NAVY	INTERIM DATA REPORT, WEST BEACH LANDFILL AND RUNWAY AREAS. ***COMMENTS: WEST BEACH LANDFILL***	INFO REPOSITORY	LANDFILL	002	IRON MOUNTAIN 45359718
LTR NONE 0000	NONE 00.0						

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject/Comments	Classification	Keywords	Sites	Location Box No.
N00236 / 000582 RPT NONE 0000	11-24-1999 **01-23-1992** NONE 00.0	PRC	WELL DECOMMISSIONING REPORT 1943-1956 DISPOSAL AREA AND WEST BEACH LANDFILL. ***COMMENTS: WELL DECOMMISSIONING***	INFO REPOSITORY	WELL	001 002	IRON MOUNTAIN 45359719
N00236 / 000828 RPT NONE 0000	11-24-1999 **06-01-1992** NONE 00.0	CANONIE	REVISED PHASE 1 AND 2A ANALYTICAL RESULTS FOR SITES 1 AND 2, 1943-1956 DISPOSAL AREA WEST BEACH LANDFILL RI/FS - VOLUME 1	REFERENCE	FS RI	001 002	IRON MOUNTAIN 45359726
N00236 / 000829 RPT NONE 0000	11-24-1999 **06-01-1992** NONE 00.0	CANONIE	REVISED PHASE 1 AND 2A ANALYTICAL RESULTS FOR SITES 1 AND 2, 1943-1956 DISPOSAL AREA WEST BEACH LANDFILL RI/FS - VOLUME 2	REFERENCE	FS RI	001 002	IRON MOUNTAIN 45359726
N00236 / 001161 LTR NONE 0000	11-24-1999 **02-09-1995** NONE 00.0	DTSC	AGENCY REQUEST FOR INSTALLATION OF GROUNDWATER MONITORING WELLS AT THE WEST BEACH LANDFILL WETLAND	ADMIN RECORD	GW LANDFILL	002	IRON MOUNTAIN 45359736
N00236 / 001201 LTR NONE 0000	11-24-1999 **02-09-1995** NONE 00.0	DTSC	REQUEST FOR INSTALLATION OF GROUNDWATER MONITORING WELLS AT THE WEST BEACH LANDFILL WETLAND	ADMIN RECORD	GW LANDFILL WETLAND	002 OU 3 OU 4	IRON MOUNTAIN 45359736
N00236 / 001181 LTR NONE 0000	11-24-1999 **05-01-1995** NONE 00.0	NAVY	INSTALLATION OF GROUNDWATER MONITORING WELLS AT THE WEST BEACH LANDFILL WETLAND	ADMIN RECORD	GW LANDFILL	002	IRON MOUNTAIN 45359736

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject/Comments	Classification	Keywords	Sites	Location Box No.
N00236 / 001213 LTR NONE 0005 0005	11-24-1999 **07-11-1995** NONE 00.0	NAVY KIKUGAWA, GEORGE GEORGE RAB	DOCUMENT SUMMARY FOR DRAFT DATA TRANSMITTAL MEMORANDUM FOR INSTALLATION RESTORATION SITES 1, 2, 3, RUNWAY AREA, 6 , 7A, 7B, 7C, 10B, 11, 13, 15, 16, AND 19	ADMIN RECORD		001 002 003 006 007 010 011 013 015 016 019	IRON MOUNTAIN 45359737
N00236 / 001216 LTR NONE 0005 0005	11-24-1999 **07-11-1995** NONE 00.0	NAVY KIKUGAWA, GEORGE GEORGE DTSC LANPHAR, THOMAS	DOCUMENT SUMMARY FOR DRAFT DATA AND DRAFT DATA FOR TRANSMITTAL MEMORANDUM FOR INSTALLATION RESTORATION SITES 1, 2, 3, RUNWAY AREA, 6 , 7A, 7B, 7C, 10B, 11, 13, 15	ADMIN RECORD		001 002 003 006 007 010 011 013 015 016 019	IRON MOUNTAIN 45359737

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject/Comments	Classification	Keywords	Sites	Location Box No.
N00236 / 001284 LTR N62474-88-D-5086 0004	11-24-1999 **04-24-1996** 00280 00.0	NAVY KIKUGAWA, GEORGE GEORGE DTSC LANPHAR, THOMAS	SUBMISSION OF COVER PAGES FOR FINAL DATA TRANSMITTAL MEMORANDUM FOR SITES 1, 2, 3, RUNWAY AREA, 6, 7A, 7B, 7C, 9, 10B, 11, 13, 15, 16 AND 19; VOLUMES 1 AND 2. ***COMMENTS: NO COMMENTS ON DRAFT TRANSMITTAL MEMORANDUM, UPDATE COVER SHEETS TO FINAL***	INFO REPOSITORY		001 002 003 006 007 009 011 013 015 016 019 021 022 023	IRON MOUNTAIN 45359738
N00236 / 001214 RPT N62474-88-D-5086 0000	11-24-1999 **05-01-1996** 00280 00.0	PRC BALCH, DUANE C. NAVY MUNEKAWA, GARY J	FINAL REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS); DATA TRANSMITTAL MEMORANDUM; SITES 1, 2, 3, RUNWAY AREA, 6, 7A, 7B, 7C, 9, 10B, 11, 13, 15, 16, AND 19; VO. ***COMMENTS: WAS DRAFT DTD 7/11/95, NO COMMENTS ON DRAFT, UPDATE COVER SHEET***	ADMIN RECORD	FS RI	001 002 003 006 007 010 011 013 015 016 019	IRON MOUNTAIN 45359737

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject/Comments	Classification	Keywords	Sites	Location Box No.
N00236 / 001215 RPT N62474-88-D-5086 0000	11-24-1999 **05-01-1996** 00280 00.0	PRC BALCH, DUANE C. NAVY MUNEKAWA, GARY J	FINAL REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS); DATA TRANSMITTAL MEMORANDUM; SITES 1, 2, 3, RUNWAY AREA, 6, 7A, 7B, 7C, 9, 10B, 11, 13, 15, 16, AND 19; VO. ***COMMENTS: WAS DRAFT DTD 07/11/95, NO COMMENTS ON DRAFT, UPDATE COVER SHEETS TO FINAL***	ADMIN RECORD	FS RI	001 002 003 006 007 010 011 013 015 016 019	IRON MOUNTAIN 45359737
N00236 / 001298 RESP NONE 0002	11-24-1999 **05-21-1996** NONE 00.0	NAVY KIKUGAWA, GEORGE GEORGE DTSC LANPHAR, THOMAS	RESPONSE TO COMMENTS ON THE PRELIMINARY DRAFT, ADDENDUM TO THE REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS) SITES 1 AND 2 RADIATION SURVEY REPORT - 05 FEBRUAR	ADMIN RECORD	FS RADIATION RI	001 002	IRON MOUNTAIN 45359739
N00236 / 001307 RPT N62474-88-D-5086 0112	11-24-1999 **06-01-1996** 00280 00.0	PRC HALKET, RICHARD RICHARD NAVY KIKUGAWA, GEORGE	DRAFT ADDENDUM TO THE REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS), DATA TRANSMITTAL MEMORANDUM, SITE 1 AND 2 RADIATION SURVEY REPORT. ***COMMENTS: REMOVED***	REMOVED	FS RADIATION RI	001 002	IRON MOUNTAIN 45359739
N00236 / 001306 LTR N62474-88-D-5086 0002	11-24-1999 **07-11-1996** 00280 00.0	NAVY KIKUGAWA, GEORGE GEORGE DTSC LANPHAR, THOMAS	SUBMISSION OF DRAFT ADDENDUM TO THE REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS), DATA TRANSMITTAL MEMORANDUM, SITE 1 AND 2 RADIATION SURVEY REPORT - JUNE 199	ADMIN RECORD	FS RADIATION RI	001 002	IRON MOUNTAIN 45359739
N00236 / 001331 RPT N62474-94-D-7430 0500	11-24-1999 **08-01-1996** DO 04 00.0	BERC ACHARYA, ARVIND ARVIND NAVY SPIELMAN, KEN	DRAFT TREATABILITY STUDY (TS) WORK PLAN (WP), INTRINSIC SEDIMENT PROCESSES STUDY, SITES 2 AND 17. ***COMMENTS: REMOVED***	REMOVED	SEDIMENT TS WP	002 017	IRON MOUNTAIN 45359740

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N00236 / 001329 **08-23-1996** NONE CMNT NONE 0004	11-24-1999 NONE 00.0	DTSC LANPHAR, THOMAS THOMAS NAVY GARIBALDI, CAMIL	COMMENTS ON THE RADIATION SURVEY AND FIELD SAMPLING WORK PLAN (WP), AND DATA TRANSMITTAL MEMORANDUM, SITES 1 AND 2 RADIATION SURVEY REPORT	ADMIN RECORD	RADIATION WP	001 002	IRON MOUNTAIN 45359740
N00236 / 001330 **09-03-1996** LTR NONE 0002	11-24-1999 NONE 00.0	NAVY SPIELMAN, KEN DTSC LANPHAR, THOMAS	SUBMISSION OF THE DRAFT TREATABILITY STUDY (TS) WORK PLAN (WP), INTRINSIC SEDIMENT PROCESSES STUDY, SITES 2 AND 17 - AUGUST 1996	ADMIN RECORD	SEDIMENT TS WP	002 017	IRON MOUNTAIN 45359740
N00236 / 000019 NONE MISC MISC N62474-94-D-7420 0030	08-31-2000 **10-22-1996** DO 04	VARIOUS AGENCIES NAVFAC - WESTERN DIVISION	COMMENTS ON SITE HEALTH AND SAFETY PLAN, INTRINSIC SEDIMENT PROCESSES STUDY FOR SITES 2 AND 17 (SEE AR #1331 - REPORT, APPENDIX C)	ADMIN RECORD	METALS PAH PCB SITE SOIL SVOC VOC	002 017	IRON MOUNTAIN 37041347
N00236 / 001342 CMNT NONE 0005	11-24-1999 **11-15-1996** NONE 00.0	USEPA RICKS, JAMES A. NAVY GARIBALDI, CAMIL	COMMENTS ON THE RADIATION SURVEY REPORT AND FIELD SAMPLING WORK PLAN (WP); DRAFT SITES 1 AND 2 RADIATION SURVEY REPORT, ADDENDUM TO THE REMEDIAL INVESTIGATION/FEA	ADMIN RECORD	FS RADIATION RI WP	001 002	IRON MOUNTAIN 45359740
N00236 / 001468 CMNT N62474-94-D-7430 0037	11-24-1999 **12-12-1996** 00004 00.0	NAVY SPIELMAN, KEN BERC HUNT, JAMES	COMMENTS ON THE DRAFT INTRINSIC SEDIMENT PROCESSES STUDY AT SITES 2 AND 17 WORK PLAN (WP) - AUGUST 1996	ADMIN RECORD	SEDIMENT WP	002 017	IRON MOUNTAIN 45359743
N00236 / 001374 RPT N62474-88-D-5086 0120	11-24-1999 **02-01-1997** 00280 00.0	PRC HUTCHISON, NEAL NEAL NAVY KIKUGAWA, GEORGE	ADDENDUM TO THE REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS) DATA TRANSMITTAL MEMORANDUM, SITE 1 AND SITE 2 RADIATION SURVEY REPORT	ADMIN RECORD	FS RADIATION RI	001 002	IRON MOUNTAIN 45359741

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N00236 / 001394	11-24-1999 **02-01-1997**	BERC MABEY, WILLIAM	FINAL TREATABILITY STUDY (TS) WORK PLAN (WP), INTRINSIC SEDIMENT PROCESSES STUDY, SITES 2 AND 17 - REVISION 1	ADMIN RECORD	SEDIMENT TS	002 017	IRON MOUNTAIN 45359741
RPT N62474-94-D-7430 1000	00004 00.0	NAVY SPIELMAN, KEN			WP		
N00236 / 001373	11-24-1999 **02-14-1997**	NAVY KIKUGAWA, GEORGE	SUBMISSION OF THE ADDENDUM TO THE REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS) DATA TRANSMITTAL MEMORANDUM, SITE 1 AND SITE 2 RADIATION SURVEY REPORT	ADMIN RECORD INFO REPOSITORY	FS RADIATION	001 002	IRON MOUNTAIN 45359741
LTR LTR N62474-88-D-5086 0001	00280 00280 00.0	GEORGE DTSC LANPHAR, THOMAS		REPOSITORY	RI		
N00236 / 001469	11-24-1999 **03-25-1997**	NAVY SPIELMAN, KEN	ACCEPTANCE OF THE INTRINSIC SEDIMENT PROCESSES STUDY AT SITE 2 AND 17 WORK PLAN (WP)	ADMIN RECORD	SEDIMENT WP	002 017	IRON MOUNTAIN 45359743
LTR N62474-94-D-7430 0001	00004 00.0	BERC HUNT, JAMES					
N00236 / 001458	11-24-1999 **10-02-1997**	NAVY GARIBALDI, CAMIL	REQUEST FOR IDENTIFICATION OF STATE APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS) FOR REMOVAL ACTIONS (RM) AT SITES 1, 2, 5, AND 10	ADMIN RECORD	ARAR RM	001 002	IRON MOUNTAIN 45359743
LTR NONE 0005	NONE 00.0	DTSC LANPHAR, THOMAS				005 010	
N00236 / 001453	11-24-1999 **11-01-1997**	TETRA TECH	DRAFT TECHNICAL WORK DOCUMENT/PRELIMINARY DRAFT REMOVAL ACTION PLAN (RAP), RADIOLOGICAL REMOVAL ACTION (RM) FOR IR SITES 1, 2, 5, AND 10	ADMIN RECORD	RAP RM	001 002	IRON MOUNTAIN 45359743
RPT N62474-94-D-7609 0056	00147 00.0	NAVY KIKUGAWA, GEORGE			TWD	005 010	
N00236 / 001454	11-24-1999 **11-01-1997**	TETRA TECH HUTCHISON, NEAL	DRAFT REMOVAL SITE EVALUATION FOR REMOVAL ACTION (RM) AT INSTALLATION RESTORATION (IR) SITES 1, 2, 5, AND 10. ***COMMENTS: REMOVED, SUPERCEDED BY #1531***	REMOVED	RM	001 002	SOUTHWEST DIVISION
RPT N62474-94-D-7609 0011	00147 00.0	NEAL NAVY KIKUGAWA, GEORGE				005 010	

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N00236 / 001452 LTR N62474-94-D-7609 0002	11-24-1999 **11-05-1997** 00147 00.0	NAVY KIKUGAWA, GEORGE GEORGE DTSC LANPHAR, THOMAS	SUBMISSION OF THE DRAFT TECHNICAL WORK DOCUMENT/PRELIMINARY DRAFT REMOVAL ACTION PLAN (RAP), RADIOLOGICAL REMOVAL ACTION (RM) FOR IR SITES 1, 2, 5, AND 10; AND TH	ADMIN RECORD	RADIOLOGICAL RAP RM TWD	001 002 005 010	IRON MOUNTAIN 45359742
N00236 / 001476 CMNT NONE 0005	11-24-1999 **01-13-1998** NONE 00.0	DTSC CASSA, MARY ROSE ROSE NAVY KIKUGAWA, GEORGE	COMMENTS ON THE WORK PLANS: LANDFILL 1 AND 2 (INSTALLATION RESTORATION SITES 1 AND 2) RADIOLOGICAL SURVEYS, SAMPLING AND REMEDIATION (25 NOVEMBER 1997); BUILDING	ADMIN RECORD	RADIOLOGICAL	001 002 005 010	IRON MOUNTAIN 45359743
N00236 / 001477 CMNT NONE 0014	11-24-1999 **01-15-1998** NONE 00.0	DTSC CASSA, MARY ROSE ROSE NAVY KIKUGAWA, GEORGE	INSTALLATION RESTORATION (IR) SITES 1, 2, 5, AND 10 RADIOLOGICAL REMOVAL ACTION (RM) DRAFT TECHNICAL WORK DOCUMENT/PRELIMINARY DRAFT REMOVAL ACTION PLAN - NOVEMBE	ADMIN RECORD	RADIOLOGICAL RM TWD	001 002 005 010	IRON MOUNTAIN 45359743
N00236 / 001478 LTR NONE 0009	11-24-1999 **01-30-1998** NONE 00.0	DTSC CASSA, MARY ROSE ROSE NAVY KIKUGAWA, GEORGE	INSTALLATION RESTORATION (IR) SITES 1, 2, 5, AND 10 RADIOLOGICAL REMOVAL ACTION (RM) DRAFT TECHNICAL WORK DOCUMENT/PRELIMINARY DRAFT REMOVAL ACTION PLAN - NOVEMBE	ADMIN RECORD	ARAR RM TWD	001 002 005 010	IRON MOUNTAIN 45359743
N00236 / 001496 PLAN PLAN N62474-94-D-7609 0100	11-24-1999 **03-01-1998** 00147 00.0	MORRISON KNUDSEN NAVY KIKUGAWA, GEORGE	DRAFT INSTALLATION RESTORATION (IR) SITES 1, 2, 5, AND 10, AND STORM DRAIN LINE F, RADIOLOGICAL REMOVAL ACTION (RM) TECHNICAL SPECIFICATIONS FOR IMPLEMENTATION WO	ADMIN RECORD	RADIOLOGICAL RM WP	001 002 005 010	IRON MOUNTAIN 45359744
N00236 / 001497 PLAN PLAN N62474-94-D-7609 0008	11-24-1999 **03-01-1998** 00147 00.0	MORRISON KNUDSEN NAVY KIKUGAWA, GEORGE	DRAFT INSTALLATION RESTORATION (IR) SITES 1, 2, 5, AND 10, AND STORM DRAIN LINE F, RADIOLOGICAL REMOVAL ACTION (RM) PLANS	ADMIN RECORD	RADIOLOGICAL RM	001 002 005 010	IRON MOUNTAIN 45359744

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N00236 / 001495 LTR N62474-94-D-7609 0002	11-24-1999 **03-25-1998** 00147 00.0	NAVY KIKUGAWA, GEORGE GEORGE DTSC CASSA, MARY ROSE	SUBMISSION OF THE DRAFT INSTALLATION RESTORATION (IR) SITES 1, 2, 5, AND 10, AND STORM DRAIN LINE F, RADIOLOGICAL REMOVAL ACTION (RM) TECHNICAL SPECIFICATIONS FOR	ADMIN RECORD	RADIOLOGICAL RM WP	001 002 005 010	IRON MOUNTAIN 45359744
N00236 / 001498 CMNT NONE 0007	11-24-1999 **03-31-1998** NONE 00.0	DTSC CASSA, MARY ROSE ROSE NAVY KIKUGAWA, GEORGE	COMMENTS ON VARIOUS DOCUMENTS REGARDING INSTALLATION RESTORATION (IR) SITES 1, 2, 5, AND 10 RADIOLOGICAL REMOVAL ACTION (RM)	ADMIN RECORD	RADIOLOGICAL RM	001 002 005 010	IRON MOUNTAIN 45359744
N00236 / 001500 RESP NONE 0007	11-24-1999 **04-07-1998** NONE 00.0	NAVY KIKUGAWA, GEORGE GEORGE DTSC CASSA, MARY ROSE	RESPONSE TO COMMENTS ON THE WORK PLANS (WP) FOR LANDFILL SITES 1 AND 2 AND BUILDINGS 5 AND 400	ADMIN RECORD	LANDFILL WP	001 002 005 010	IRON MOUNTAIN 45359744
N00236 / 001499 CMNT NONE 0003	11-24-1999 **04-08-1998** NONE 00.0	USEPA COOK, ANNA-MARIE ANNA-MARIE NAVY KIKUGAWA, GEORGE	COMMENTS ON THE RADIOLOGICAL REMOVAL ACTION (RM) FOR INSTALLATION RESTORATION (IR) SITES 1, 2, 5 AND 10	ADMIN RECORD	RADIOLOGICAL RM	001 002 005 010	IRON MOUNTAIN 45359744
N00236 / 001503 LTR NONE 0056	11-24-1999 **04-10-1998** NONE 00.0	NAVY KIKUGAWA, GEORGE GEORGE DTSC CASSA, MARY ROSE	DRAFT FINAL WORK PLAN (WP) LANDFILL 1 AND 2 (INSTALLATION RESTORATION SITES 1 AND 2) RADIOLOGICAL SURVEYS AND ANOMALY REMOVAL, REVISION 1	ADMIN RECORD	LANDFILL RADIOLOGICAL WP	001 002	IRON MOUNTAIN 45359744
N00236 / 001501 LTR NONE 0002	11-24-1999 **04-22-1998** NONE 00.0	NAVY KIKUGAWA, GEORGE GEORGE DTSC CASSA, MARY ROSE	SUBMISSION OF THE DRAFT FINAL WORK PLANS, LANDFILL 1 AND 2 (INSTALLATION RESTORATION SITES 1 AND 2) RADIOLOGICAL SURVEYS AND ANOMALY REMOVAL - 10 APR 1998, AND BU	ADMIN RECORD	RADIOLOGICAL WP	001 002 005 010	IRON MOUNTAIN 45359744

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N00236 / 001531	11-24-1999 **05-01-1998**	TETRA TECH HO, EDWARD	FINAL REMOVAL SITE EVALUATION FOR REMOVAL ACTIONS (RM) AT INSTALLATION RESTORATION (IR) SITES 1, 2, 5, AND 10	ADMIN RECORD	RM	001 002	IRON MOUNTAIN 45359744
RPT N62474-94-D-7609 0010	00147 00.0	NAVY KIKUGAWA, GEORGE				005 010	
N00236 / 001510	11-24-1999 **05-12-1998**	DTSC MURPHY, DANIEL E	REQUIREMENTS FOR DISCHARGE OF GROUNDWATER TO SAN FRANCISCO BAY	ADMIN RECORD	GW	001 002	IRON MOUNTAIN 45359744
LTR NONE 0002	NONE 00.0	NAVY KIKUGAWA, GEORGE				005 010	
N00236 / 001524	11-24-1999 **05-12-1998**	NAVY KIKUGAWA, GEORGE	RESPONSE TO COMMENTS ON THE RADIOLOGICAL REMOVAL ACTION (RM) TECHNICAL WORK DOCUMENT	ADMIN RECORD	RADIOLOGICAL RM	001 002	IRON MOUNTAIN 45359744
RESP NONE 0011	NONE 00.0	GEORGE USEPA COOK, ANNA-MARIE			TWD	005 010	
N00236 / 000037 NONE PLAN PLAN N62474-94-D-7609 0050	11-20-2000 **05-13-1998** 00124 00124	TETRA TECH EM INC. P. BOUCHER P. BOUCHER NAVFAC - WESTERN DIVISION	DRAFT ECOLOGICAL RISK ASSESSMENT, QUALITY ASSURANCE PROJECT PLAN - WEST BEACH LANDFILL, AND RUNWAY WETLAND (MODIFICATION NO. 02)	ADMIN RECORD INFO REPOSITORY REPOSITORY	DQO ERA LANDFILL QAPP	002 OU 02	IRON MOUNTAIN 80462377
N00236 / 000039 NONE PLAN PLAN N62474-94-D-7609 0100	11-20-2000 **05-13-1998** 00124 00124	TETRA TECH EM INC. P. BOUCHER P. BOUCHER NAVFAC - WESTERN DIVISION	DRAFT ECOLOGICAL RISK ASSESSMENT WORK PLAN AND FIELD SAMPLING AND ANALYSIS PLAN - WEST BEACH LANDFILL, WEST BEACH LANDFILL WETLAND, AND RUNWAY WETLAND (MODIFICATION NO. 02)	ADMIN RECORD INFO REPOSITORY REPOSITORY	ERA LANDFILL SAP WORK PLAN	002 OU 02	IRON MOUNTAIN 80462377
N00236 / 001515	11-24-1999 **05-13-1998**	NAVY KIKUGAWA, GEORGE	RESPONSE TO COMMENTS ON THE INSTALLATION RESTORATION (IR) SITES 1, 2, 5 AND 10 RADIOLOGICAL REMOVAL ACTION (RM), TECHNICAL WORK DOCUMENT/DRAFT REMEDIAL ACTION (RA	ADMIN RECORD	RA RADIOLOGICAL	001 002	IRON MOUNTAIN 45359744
RESP NONE 0018 0018	NONE 00.0	GEORGE DTSC CASSA, MARY ROSE			RAP RM TWD	005 010	

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N00236 / 001525 LTR NONE 0005	11-24-1999 **05-15-1998** NONE 00.0	NAVY GEE, HENRY C. DTSC MURPHY, DANIEL E	APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS) FOR DISCHARGE OF GROUNDWATER TO SAN FRANCISCO BAY FOR REMOVAL ACTIONS (RM) AT SITE 1, 2, 5, AND 10	ADMIN RECORD	ARAR GW RM	001 002 005 010	IRON MOUNTAIN 45359744
N00236 / 001520 CMNT NONE 0014	11-24-1999 **05-18-1998** NONE 00.0	DTSC CASSA, MARY ROSE ROSE NAVY KIKUGAWA, GEORGE	COMMENTS ON THE DRAFT FINAL WORK PLAN (WP), BUILDINGS 5 AND 400 CONTAMINATED DRAIN BASIN PIPING REMOVAL (WP NO. NASA-1, REV 1; APRIL 8, 1998), WP DRAFT FINAL LAND	ADMIN RECORD	LANDFILL RADIOLOGICAL WP	001 002	IRON MOUNTAIN 45359744
N00236 / 001521 CMNT NONE 0004	11-24-1999 **05-27-1998** NONE 00.0	DTSC CASSA, MARY ROSE ROSE NAVY KIKUGAWA, GEORGE	COMMENTS ON THE DRAFT FINAL TECHNICAL WORK DOCUMENT/DRAFT INTERIM REMEDIAL ACTION (IRA) PLAN FOR INSTALLATION RESTORATION SITES 1, 2, 5, AND 10 RADIOLOGICAL REMOV	ADMIN RECORD	IRA RADIOLOGICAL RM TWD	001 002 005 010	IRON MOUNTAIN 45359744
N00236 / 001538 RPT NONE 0050	11-24-1999 **06-05-1998** NONE 00.0	SSPORTS NAVY KIKUGAWA, GEORGE	FINAL WORK PLAN (WP) FOR LANDFILL 1 AND 2 (IR SITES 1 AND 2) RADIOLOGICAL SURVEYS AND ANOMALY REMOVAL	ADMIN RECORD	RADIOLOGICAL WP	001 002	IRON MOUNTAIN 45359745
N00236 / 001528 CMNT NONE 0007	11-24-1999 **06-22-1998** NONE 00.0	DTSC CASSA, MARY ROSE ROSE NAVY KIKUGAWA, GEORGE	COMMENTS ON THE INSTALLATION RESTORATION (IR) SITES 1, 2, 5, AND 10 RADIOLOGICAL REMOVAL ACTION (RM) REVISIONS TO TECHNICAL WORK DOCUMENT/REMEDIAL ACTION (RA) PLA	ADMIN RECORD	RA RAP RM	001 002 005 010	IRON MOUNTAIN 45359744
N00236 / 001529 CMNT NONE 0010 0010	11-24-1999 **06-22-1998** NONE 00.0	DTSC CASSA, MARY ROSE ROSE NAVY KIKUGAWA, GEORGE	COMMENTS ON THE INSTALLATION RESTORATION (IR) SITES 1, 2, 5, AND 10 RADIOLOGICAL REMOVAL ACTION (RM) SITE QUALITY ASSURANCE PLAN (QAP), SITE WORK PLAN (WP), AND S	ADMIN RECORD	HASP QAP RADIOLOGICAL RM WP	001 002 005 010	IRON MOUNTAIN 45359744

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N00236 / 001536	11-24-1999 **07-01-1998**	NAVY KIKUGAWA, GEORGE	SUBMISSION OF THE FINAL WORK PLAN (WP) FOR (1) BUILDINGS 5 AND 400 RADIOACTIVELY CONTAMINATED DRAIN PIPING/WALL/FLOOR REMOVAL - 3 JUNE 1998, AND (2) LANDFILL 1 AN	ADMIN RECORD	LANDFILL RADIOACTIVELY	001 002	IRON MOUNTAIN 45359745
LTR NONE 0002	NONE 00.0	GEORGE DTSC CASSA, MARY ROSE			RADIOLOGICAL WP	005 010	
N00236 / 001532	11-24-1999 **07-08-1998**	TETRA TECH SOLBERG, PETER	INSTALLATION RESTORATION (IR) SITES 1, 2, 5, AND 10; RADIOLOGICAL REMOVAL ACTION (RM) FINAL TECHNICAL WORK DOCUMENT/INTERIM REMEDIAL ACTION (IRA) PLAN	ADMIN RECORD	IRA RADIOLOGICAL	001 002	IRON MOUNTAIN 45359744
RPT N62474-94-D-7609 0100	00147 00.0	NAVY KIKUGAWA, GEORGE			RM	005 010	
N00236 / 001567	11-24-1999 **08-01-1998**	TETRA TECH	FINAL RADIOLOGICAL REMOVAL ACTION (RM) FOR IR SITES 1, 2, 5, 10, AND STORM DRAIN LINE F, IMPLEMENTATION WORK PLAN (WP) TECHNICAL SPECIFICATIONS	ADMIN RECORD	RADIOLOGICAL RM	001 002	IRON MOUNTAIN 45359745
PLAN N62474-94-D-7609 0200	00147 00.0	NAVY KIKUGAWA, GEORGE			SPECS WP	005 010	
N00236 / 001568	11-24-1999 **08-01-1998**	TETRA TECH	FINAL RADIOLOGICAL REMOVAL ACTION (RM) FOR IR SITES 1, 2, 5, 10, AND STORM DRAIN LINE F, IMPLEMENTATION WORK PLAN (WP) DRAWINGS	ADMIN RECORD	PLANS RADIOLOGICAL	001 002	IRON MOUNTAIN 45359745
PLAN N62474-94-D-7609 0008	00147 00.0	NAVY KIKUGAWA, GEORGE			RM WP	005 010	
N00236 / 001566	11-24-1999 **08-27-1998**	NAVY KIKUGAWA, GEORGE	SUBMISSION OF THE FINAL RADIOLOGICAL REMOVAL ACTION (RM) FOR IR SITES 1, 2, 5, 10, AND STORM DRAIN LINE F, IMPLEMENTATION WORK PLAN (1) TECHNICAL SPECIFICATIONS,	ADMIN RECORD	PLANS RADIOLOGICAL	001 002	IRON MOUNTAIN 45359745
LTR N62474-94-D-7609 0002 0002	00147 00.0	GEORGE DTSC CASSA, MARY ROSE			RM SPECS WP	005 010	
N00236 / 001548	11-24-1999 **08-28-1998**	TETRA TECH	INSTALLATION RESTORATION SITES 1, 2, 5, AND 10, RADIOLOGICAL REMOVAL ACTION (RM), ACTION MEMORANDUM (AM)/FINAL INTERIM REMEDIAL ACTION (IRA) PLAN	ADMIN RECORD	AM IRA	001 002	IRON MOUNTAIN 45359745
ACTM N62474-94-D-7609 0111	00147 00.0	NAVY KIKUGAWA, GEORGE			RADIOLOGICAL RM	005 010	

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N00236 / 001593 LTR NONE 0002	11-24-1999 **12-28-1998** NONE 00.0	BERC HUNT, JAMES DTSC CASSA, MARY ROSE	DRAFT TECHNICAL REPORTS, INTRINSIC SEDIMENT PROCESSES STUDY, SITES 2 AND 17; BERKELEY ENVIRONMENTAL RESTORATION CENTER'S (BERC) LETTER TO REVIEWERS	ADMIN RECORD	BERC SEDIMENT	002 017	IRON MOUNTAIN 45359747
N00236 / 001592 LTR NONE 0001	11-24-1999 **12-29-1998** NONE 00.0	NAVY YEE, RONALD DTSC CASSA, MARY ROSE	SUBMISSION OF THE DRAFT TECHNICAL REPORTS, INTRINSIC SEDIMENT PROCESSES STUDY, SITES 2 AND 17; (1) BERC LETTER TO REVIEWERS, (2) APPENDIX B, (3) APPENDIX C, (4) A	ADMIN RECORD	BERC SEDIMENT	002 017	IRON MOUNTAIN 45359747
N00236 / 001594 RPT NONE 0250	11-24-1999 **12-29-1998** NONE 00.0	BERC HUNT, JAMES DTSC CASSA, MARY ROSE	DRAFT TECHNICAL REPORTS, INTRINSIC SEDIMENT PROCESSES STUDY, SITES 2 AND 17; (1) APPENDICES B-E, H, AND I	ADMIN RECORD	BERC SEDIMENT	002 017	IRON MOUNTAIN 45359747
N00236 / 001596 LTR NONE 0001	11-24-1999 **01-29-1999** NONE 00.0	NAVY YEE, RONALD DTSC CASSA, MARY ROSE	SUBMISSION OF THE DRAFT TECHNICAL REPORTS FOR THE INTRINSIC SEDIMENT PROCESSES STUDY, SITES 2 AND 17; (1) SAMPLING LOCATIONS IN SEAPLANE LAGOON, (2) APPENDIX A, (	ADMIN RECORD	SEDIMENT	002 017	IRON MOUNTAIN 45359747
N00236 / 001597 RPT NONE 0100	11-24-1999 **01-29-1999** NONE 00.0	BERC HUNT, JAMES DTSC CASSA, MARY ROSE	DRAFT TECHNICAL REPORTS FOR THE INTRINSIC SEDIMENT PROCESSES STUDY, SITES 2 AND 17; (1) SAMPLING LOCATIONS IN SEAPLANE LAGOON, (2) APPENDIX A, (3) APPENDIX F, AND	ADMIN RECORD	SEDIMENT	002 017	IRON MOUNTAIN 45359747
N00236 / 001600 ROD N62474-94-D-7430 0035	11-24-1999 **02-08-1999** 00004 00.0	BERC HUNT, JAMES DTSC YEE, RONALD	PRELIMINARY DRAFT FINAL TREATABILITY STUDY (TS) REPORT, INTRINSIC SEDIMENTS PROCESSES STUDY AT WEST BEACH LANDFILL WETLANDS (SITE 2) AND SEAPLANE LAGOON (SITE 17)	ADMIN RECORD	LANDFILL SEDIMENTS TS	002 017	IRON MOUNTAIN 45359747

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N00236 / 001599	11-24-1999 **02-12-1999**	NAVY YEE, RONALD	SUBMISSION OF THE PRELIMINARY DRAFT FINAL TREATABILITY STUDY (TS) REPORT, INTRINSIC SEDIMENTS	ADMIN RECORD	LANDFILL SEDIMENTS	002 017	IRON MOUNTAIN 45359747
LTR N62474-94-D-7430 0002	00004 00.0	DTSC CASSA, MARY ROSE	PROCESSES STUDY AT WEST BEACH LANDFILL WETLANDS (SITE 2) AND		TS		
N00236 / 000038 NONE PLAN PLAN N62474-94-D-7609 0050	11-20-2000 **04-23-1999** 00124 00124	TETRA TECH EM INC. P. BOUCHER P. BOUCHER NAVFAC - WESTERN DIVISION	FINAL ECOLOGICAL RISK ASSESSMENT QUALITY ASSURANCE PROJECT PLAN - WEST BEACH LANDFILL, WEST BEACH LANDFILL WETLAND, AND RUNWAY WETLAND (MODIFICATION NO. 02)	ADMIN RECORD INFO REPOSITORY REPOSITORY	DQO ERA LANDFILL QAPP	002 OU 02	IRON MOUNTAIN 80462377
N00236 / 001704 NONE RPT NONE 0050	06-16-2000 **05-02-1999** NONE	SSPORTS ENVIRON. DETACHMENT NAVFAC - SOUTHWEST DIVISION	FINAL - UNEXPLODED ORDNANCE SITE INVESTIGATION SURVEY WORK PACKAGE	ADMIN RECORD	PCB UXO	001 002 OU 3	IRON MOUNTAIN 136772564
N00236 / 001680 NONE MM NONE 0050	01-21-2000 **07-06-1999** NONE 10.4	NAVFAC - WESTERN DIVISION NAVFAC - WESTERN DIVISION	DRAFT RESTORATION ADVISORY BOARD (RAB) MEETING SUMMARY FOR 6 JULY 1999 (INCLUDES AGENDA, HANDOUTS AND SIGN-IN SHEETS) SIGN-IN SHEET IS CONFIDENTIAL	ADMIN RECORD CONFIDENTIAL	FS RAB RI TECH MEMO TPH UST	001 002 006 007 008 015 016 017 025 BLDG. 400 BLDG. 5 OU 1 OU 2 OU 3 OU 4	IRON MOUNTAIN 45359751

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject/Comments	Classification	Keywords	Sites	Location Box No.
N00236 / 001679 NONE MM NONE 0015	01-21-2000 **08-03-1999** NONE 10.4	NAVFAC - WESTERN DIVISION NAVFAC - WESTERN DIVISION	RESTORATION ADVISORY BOARD (RAB) MEETING SUMMARY FOR 3 AUGUST 1999 (INCLUDES AGENDA, HANDOUTS AND SIGN-IN SHEETS)	ADMIN RECORD	FS PCB RAB RI UXO	001 002 003 004 005 009 010 013 014 017 019 020 021 022 023 024 025 1112 360 400 410 BLDG. 14 BLDG. 162 BLDG. 5 OU 1 OU 2 OU 3 OU 4	IRON MOUNTAIN 45359751

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject/Comments	Classification	Keywords	Sites	Location Box No.
N00236 / 001677 NONE MM NONE 0020	01-21-2000 **10-05-1999** NONE 10.4	NAVFAC - WESTERN DIVISION NAVFAC - WESTERN DIVISION	DRAFT RESTORATION ADVISORY BOARD (RAB) MEETING SUMMARY FOR 5 OCTOBER 1999 (INCLUDES AGENDA, HANDOUTS AND SIGN-IN SHEETS)	ADMIN RECORD	BTEX FFA RAB TDS UST	001 002 005 010 014 025 BLDG. 400 BLDG. 5 OU 1 OU 2 OU 3	IRON MOUNTAIN 45359751
N00236 / 001705 NONE RPT NONE 0020	06-16-2000 **10-22-1999** NONE	SSPORTS ENVIRON. DETACHMENT NAVFAC - SOUTHWEST DIVISION	FINAL - UNEXPLODED ORDNANCE SITE INVESTIGATION FINAL SUMMARY REPORT	ADMIN RECORD	UXO	001 002 OU 3	IRON MOUNTAIN 136772564

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject/Comments	Classification	Keywords	Sites	Location Box No.
N00236 / 001676 NONE MM NONE 0030	01-21-2000 **11-11-1999** NONE 10.4	NAVFAC - SOUTHWEST DIVISION NAVFAC - SOUTHWEST DIVISION	DRAFT RESTORATION ADVISORY BOARD MEETING SUMMARY OF 11 NOVEMBER 1999 (INCLUDES 11/2/99 AGENDA, HANDOUTS AND SIGN-IN SHEETS)	ADMIN RECORD	EBS EIS FFA FOSET FOST GW PCB RAB UXO VOC	001 002 004 006 007 008 010 012 015 016 017 018 020 024 025 BLDG. 400 BLDG. 5 OU 1 OU 2 OU 3 OU 4	IRON MOUNTAIN 45359751
N00236 / 001674 NONE MM NONE 0020	01-21-2000 **12-07-1999** NONE 10.4	NAVFAC - SOUTHWEST DIVISION NAVFAC - SOUTHWEST DIVISION	DRAFT RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES OF 7 DECEMBER 1999 (INCLUDES AGENDA, HANDOUTS AND SIGN IN SHEET)	ADMIN RECORD	RAB	002	IRON MOUNTAIN 45359751

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject/Comments	Classification	Keywords	Sites	Location Box No.
N00236 / 001681 NONE MM MM	02-15-2000 **01-04-2000** NONE NONE	NAVFAC - WESTERN DIVISION DIVISION	RESOTRATION ADVISORY BOARD (RAB) MEETING MINUTES FROM JANUARY 4, 2000. (WITH ENCLOSURES)	ADMIN RECORD INFO REPOSITORY REPOSITORY	CAP CEQA FS	001 002 005 005	IRON MOUNTAIN 45359751
NONE 0026		NAVFAC - SOUTHWEST DIVISION			MTG MINS OU RAB UST	010 025 BLDG. 400 BLDG. 5 OU 1 OU 2 OU 3 OU 4	
N00236 / 001671 NONE RPT RPT N62474-94-D-7609 0200	01-18-2000 **01-06-2000** 236* 04.2	TETRA TECH EM INC. M. REISIG M. REISIG NAVFAC - SOUTHWEST DIVISION	DRAFT FINAL - FEASIBILITY STUDY FOR THE MARSH CRUST AND GROUNDWATER {SEE AR #33 & 34 - COMMENTS BY DTSC & EPA}. ***COMMENTS: * INCLUDES CTO'S 236 AND 245***	ADMIN RECORD	FS GW PAH PCB SVOC TDS TPH VOC	002	IRON MOUNTAIN 45359751
N00236 / 001688 NONE LTR NONE 0015	04-27-2000 **01-14-2000** NONE	ENVIRONMENTAL RESOURCES MGMT. J. MCLAUGHLIN NAVFAC - SOUTHWEST DIVISION R. HEGARTY	PROPOSED GROUNDWATER SAMPLING APPROACH	ADMIN RECORD		002	IRON MOUNTAIN 37041347
N00236 / 000033 TC.0271.10613 LTR LTR N62474-94-D-7609 0006	11-16-2000 **02-07-2000** 00271 00271	U.S. EPA, SAN FRANCISCO, CA P. RAMSEY P. RAMSEY NAVFAC - SOUTHWEST DIVISION L. OCAMPO	REVIEW AND COMMENTS OF THE DRAFT FINAL MARSH CRUST AND GROUNDWATER FEASIBILITY STUDY & FOR THE MARSH CRUST AND FORMER SUBTIDAL AREA AT ALAMEDA POINT {SEE AR #1671 & 34 - FEASIBILITY STUDY & COMMENTS BY DTSC}. ***COMMENTS: *EPA COMMENTS PROVIDED BY TETRA TECH, INC.***	ADMIN RECORD INFO REPOSITORY REPOSITORY	COMMENTS FS GW	002 SWMU 1	IRON MOUNTAIN 80462377

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject/Comments	Classification	Keywords	Sites	Location Box No.
N00236 / 000034 TC.0271.10613 LTR LTR N62474-94-D-7609 0010	11-16-2000 **02-07-2000** 00271 00271	DTSC, BERKELEY, CA M. CASSA M. CASSA NAVFAC - SOUTHWEST DIVISION L. OCAMPO	REVIEW AND COMMENTS OF THE DRAFT FINAL MARSH CRUST AND GROUNDWATER FEASIBILITY STUDY & FOR THE MARSH CRUST AND FORMER SUBTIDAL AREA AT ALAMEDA POINT (WITH ENCLOSURE) {SEE AR #1671 & 33 - FEASIBILITY STUDY & COMMENTS BY EPA}. ***COMMENTS: *DTSC COMMENTS PROVIDED BY TETRA TECH, INC.***	ADMIN RECORD INFO REPOSITORY REPOSITORY	COMMENTS FS GW	002 SWMU 1	IRON MOUNTAIN 80462377
N00236 / 001686 NONE MISC NONE 0011	03-28-2000 **02-25-2000** NONE	NAVFAC - SOUTHWEST DIVISION DTSC, BERKELEY, CA M. CASSA	NAVY RESPONSE TO COMMENTS - DRAFT FINAL FEASIBILITY STUDY FOR THE MARSH CRUST AND GROUNDWATER	ADMIN RECORD	RESPONSE	002	IRON MOUNTAIN 37041347
N00236 / 001692 NONE RPT RPT N62474-94-D-7609 0200	04-27-2000 **03-31-2000** 236*	TETRA TECH EM INC. R. REISIG R. REISIG NAVFAC - SOUTHWEST DIVISION	FINAL - FEASIBILITY STUDY FOR THE MARSH CRUST AND THE FORMER STBITDAL AREA. ***COMMENTS: * ALSO CTO 245***	ADMIN RECORD	FS PAH PCB RI TPH UST VOC	002 003 004 005 006 007 OU 1 OU 2 OU 3	IRON MOUNTAIN 37041347
N00236 / 001702 NONE RPT RPT N62474-94-D-7609 0100	06-16-2000 **05-05-2000** 00271	TETRA TECH EM INC. M. REISIG M. REISIG NAVFAC - SOUTHWEST DIVISION	INTERNAL DRAFT - RECORD OF DECISION/REMEDIAL ACTION PLAN FOR THE MARSH CRUST GROUNDWATER (ANNEX) AND THE MARSH CRUST AND FORMER SUBTIDAL AREA (POINT)	ADMIN RECORD	HHRA PAH PCB ROD SVOC TDS TPH VOC	001 002 003 004 006 OU 1 OU 2 OU 3 OU 4 WELL S27	IRON MOUNTAIN 136772564

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject/Comments	Classification	Keywords	Sites	Location Box No.
N00236 / 000046 NONE RPT RPT N68711-00-F-0104 0600 0600	12-18-2000 **12-04-2000** NONE NONE	NEPTUNE AND COMPANY, INC. NAVFAC - SOUTHWEST DIVISION	DRAFT REMEDIAL INVESTIGATION REPORT INCLUDES ELECTRONIC VERSION {SEE AR #68 - COMMENTS BY CRWQCB, #69 - COMMENTS BY FISH & WILDLIFE, #70 - COMMENTS BY DTSC, #71 - COMMENTS BY FISH & GAME & #72 - COMMENTS BY EPA}	ADMIN RECORD INFO REPOSITORY REPOSITORY	BCT BRAC FS IR IRP OU PAH PCB RA RI ROD SVOC TPH TRPH VOC	002	IRON MOUNTAIN 80462377
N00236 / 000068 2199.9285 (LBJ) LTR LTR NONE 0007	03-26-2001 **02-28-2001** NONE NONE	CRWQCB, OAKLAND, CA B. JOB B. JOB NAVFAC - SOUTHWEST DIVISION M. MCCLELLAND	CRWQCB REVIEW AND COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION REPORT {SEE AR #46 - REMEDIAL INVESTIGATION REPORT, #69 - COMMENTS BY FISH & WILDLIFE, #70 - COMMENTS BY DTSC, #71 - COMMENTS BY FISH & GAME, #72 - COMMENTS BY EPA}	ADMIN RECORD INFO REPOSITORY REPOSITORY	COMMENTS LANDFILL PCB RI	002	IRON MOUNTAIN 80462396
N00236 / 000084 NONE MISC MISC NONE 0060	04-12-2001 **03-07-2001** NONE NONE	GOLDEN GATE AUDUBON SOCIETY A. FEINSTEIN NAVFAC - SOUTHWEST DIVISION R. WEISSENBORN	COMPILATION OF COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION REPORT PROVIDED BY THE GOLDEN GATE AUDUBON SOCIETY {SEE AR #46 - DRAFT REMEDIAL INVESTIGATION}	ADMIN RECORD INFO REPOSITORY	COMMENTS RI	002 OU 4A	IRON MOUNTAIN 80462396
N00236 / 000070 NONE LTR LTR NONE 0012	03-26-2001 **03-08-2001** NONE NONE	DTSC, BERKELEY, CA M. CASSA M. CASSA NAVFAC - SOUTHWEST DIVISION R. WEISSENBORN	DTSC REVIEW AND COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION REPORT (WITH ENCLOSURE) {SEE AR #46 - REMEDIAL INVESTIGATION REPORT, #68 - COMMENTS BY CRWQCB, #69 - COMMENTS BY FISH & WILDLIFE, #71 - COMMENTS BY FISH & GAME & #72 - COMMENT BY EPA}	ADMIN RECORD INFO REPOSITORY REPOSITORY	COMMENTS LANDFILL RI	002	IRON MOUNTAIN 80462396

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject/Comments	Classification	Keywords	Sites	Location Box No.
N00236 / 000071 NONE LTR LTR NONE 0003	03-26-2001 **03-08-2001** NONE NONE	DEPARTMENT OF FISH & GAME C. HUANG C. HUANG NAVFAC - SOUTHWEST DIVISION R. WEISSENBORN	FISH AND GAME REVIEW AND COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION REPORT {SEE AR #46 - REMEDIAL INVESTIGATION, #68 - COMMENTS BY CRWQCB, #69 - COMMENTS BY FISH & WILDLIFE, #70 - COMMENTS BY DTSC & #72 - COMMENTS BY EPA}	ADMIN RECORD INFO REPOSITORY REPOSITORY	COMMENTS LANDFILL RI	002	IRON MOUNTAIN 80462396
N00236 / 000072 NONE MISC MISC NONE 0025	03-26-2001 **03-08-2001** NONE NONE	U.S. EPA, SAN FRANCISCO, CA P. RAMSEY P. RAMSEY NAVFAC - SOUTHWEST DIVISION R. WEISSENBORN	EPA REVIEW AND COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION REPORT {SEE AR #46 - REMEDIAL INVESTIGATION REPORT, #68 - COMMENTS BY CRWQCB, #69 - COMMENTS BY FISH & WILDLIFE, #70 - COMMENTS BY DTSC & #71 - COMMENTS BY FISH & GAME}	ADMIN RECORD INFO REPOSITORY REPOSITORY	COMMENTS LANDFILL RI	002 OU 4A	IRON MOUNTAIN 80462396
N00236 / 000069 NONE LTR LTR NONE 0006	03-26-2001 **03-15-2001** NONE NONE	U.S DEPARTMENT OF THE INTERIOR D. PIERCE NAVFAC - SOUTHWEST DIVISION R. WEISSENBORN	FISH AND WILDLIFE SERVICE REVIEW AND COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION REPORT {SEE AR #46 - REMEDIAL INVESTIGATION, #68 - COMMENTS BY CRWQCB, #70 - COMMENTS BY DTSC, #71 - COMMENTS BY FISH & GAME & #72 - COMMENTS BY EPA}	ADMIN RECORD INFO REPOSITORY	COMMENTS RI	002	IRON MOUNTAIN 80462396
N00236 / 000236 FWSD-RACII-01-031 6 & SWDIV SER 6 & SWDIV SER 06CA.RW/0889 PLAN N44255-95-D-6030 0180	09-21-2001 **08-29-2001** DO 95 DO 95	FOSTER WHEELER L. HUMPHREY L. HUMPHREY NAVFAC - SOUTHWEST DIVISION	DRAFT FOCUSED REMEDIAL INVESTIGATION WORK PLAN - ORDNANCE & EXPLOSIVES WASTE CHARACTERIZATION, TIME CRITICAL REMOVAL ACTION, & GEOTECHNICAL & SEISMIC EVALUATIONS FOR SITE 2, REV. 0. ***COMMENTS: INCLUDES SWDIV TRANSMITTAL LETTER BY R. WEISSENBORN & RESPONSE TO NAVY COMMENTS ON THE PRELIMINARY DRAFT FOCUSED REMEDIAL INVESTIGATION (DCN: FWSD-RACII-01-0332)***	ADMIN RECORD INFO REPOSITORY REPOSITORY	ORDNANCE PCB PVC RI TCRA UXO WORK PLAN	002	IRON MOUNTAIN 136772563

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject/Comments	Classification	Keywords	Sites	Location Box No.
N00236 / 000316 FWSD-RACII-02-007 3 & SWDIV SER 3 & SWDIV SER 06CA.RW/1370 PLAN N44255-95-D-6030 0320	01-08-2002 **01-03-2002** DO 95 DO 95	FOSTER WHEELER L. HUMPHREY L. HUMPHREY NAVFAC - SOUTHWEST DIVISION	DRAFT FINAL FOCUSED REMEDIAL INVESTIGATION WORK PLAN - ORDNANCE & EXPLOSIVES WASTE CHARACTERIZATION, TIME-CRITICAL REMOVAL ACTION, & GEOTECHNICAL & SEISMIC EVALUATIONS, REVISION 0. ***COMMENTS: INCLUDES RESPONSE TO DTSC COMMENTS ON THE DRAFT WORK PLAN & SWDIV TRANSMITTAL LETTER BY R. WEISSENBORN***	ADMIN RECORD INFO REPOSITORY REPOSITORY	EXPLOSIVES ORDNANCE PCB PVC RI TCRA UXO WORK PLAN	002	SOUTHWEST DIVISION

UIC=N00236
No Keywords
Sites=002
No Classification

APPENDIX B

RISK ASSESSMENT PROCEDURES FOR ORDNANCE AND EXPLOSIVES SITES

APPENDIX B

RISK ASSESSMENT PROCEDURES FOR ORDNANCE AND EXPLOSIVES SITES

Site Name IR Site 2 | Rater's Name N/A

Site Location Alameda NAS | Phone Number N/A

DERP Project # N/A | Organization N/A

Date Completed January 5, 2002 | Score N/A

ORDNANCE AND EXPLOSIVES RISK ASSESSMENT:

This risk assessment procedure was developed in accordance with MIL-STD 882C and AR 385-10. The risk assessment should be based on the best available information resulting from record searches, reports of Explosive Ordnance Disposal (EOD) detachments actions, field observations, interviews, and measurements. This information is used to assess the risk involved based on the potential ordnance and explosive waste (OEW) hazards identified at the site. The risk assessment is composed of two factors, hazard severity and hazard probability. Personnel involved in visits to potential OEW sites should view the USAESCH-OE videotape entitled "A Life Threatening Encounter: OEW".

Part I. Hazard Severity. Hazard severity categories are defined to provide a qualitative measure of the worst possible event that could result from personnel exposure to various types and quantities of unexploded ordnance.

TYPE OF ORDNANCE: (Circle all that apply)	VALUE
A. Conventional ordnance and ammunition:	
Medium/large caliber (20 mm and larger)	(10)
Bombs, explosive	10
Grenades, hand or rifle, explosive	10
Landmine, explosive	10
Rockets, guided missile, explosive	10
Detonators, blasting caps, fuses, boosters, bursters	6
Bombs, practice (w/spotting charges)	6
Grenades, practice (w/spotting charges)	4
Landmine, practice (w/spotting charges)	4
Small arms, complete round (.22 cal - .50 cal)	1
Small arms, expended	0
Practice ordnance (w/o spotting charges)	0
Conventional ordnance and ammunition (largest single value)	10

What evidence do you have regarding conventional unexploded ordnance? Four truck loads of inert ordnance from the Defense Logistics Agency, Alameda, were buried in IR Site 2. The inert ordnance ranged in size from 4 feet long by 12 inches wide and also included smaller ammunition (Roy F. Weston, Inc., 2000).

B. Pyrotechnics (for munitions not described above)	VALUE
Munition (containers) containing white phosphorus (WP) or other pyrophoric material (i.e., spontaneously flammable)	10
Munition containg a flame or incendiary material (i.e., Napalm, Triethylaluminum metal incendiaries)	6
Flares, signals, simulators, screening smokes (other than WP)	4

Pyrotechnics (select the single largest value) N/A

What evidence do you have regarding pyrotechnics? _____

C. Bulk high explosives (HE) (not an integral part of conventional ordnance; uncontainerized):	VALUE
Primary or initiating explosives (lead styphnate, lead azide, nitroglycerin, mercury azide, mercury fulminate, tetracene, etc.)	10
Demolition charges	10
Secondary explosives (PETN, compositions A, B, C, tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8
Military dynamite	6
Less sensitive explosives (ammonium nitrate, explosive D, etc.)	3

High explosives (select the single largest value) N/A

What evidence do you have regarding bulk explosives? _____

D. Bulk propellants (not an integral part of rockets, guided missiles, or other conventional ordnance; uncontainerized)	VALUE
Solid or liquid propellants	6
Propellants	N/A

What evidence do you have regarding bulk propellants? _____

E. Chemical warfare material (CWM) and Radiological Weapons:	VALUE
Toxic chemical agents (choking, nerve, blood, blister)	25
War gas identification Sets	20
Radiological	15
Riot control agents (vomiting, tear)	(5)
Chemical and Radiological (select the single largest value)	5

What evidence do you have regarding chemical or radiological? CS (o-Chlorobenzalmalonitrile) riot control agents placed in containers as a loose powder from the 1968-1969 Berkeley student riots were buried in the landfill (Roy F. Weston, Inc., 2000).

TOTAL HAZARD SEVERITY VALUE (Sum of value A through E (maximum of 61) 15

Apply this value to Table 1 to determine Hazard Severity Category

TABLE B-1

HAZARD SEVERITY*

Description	Category	Hazard Severity Value
Catastrophic	I	21 and/or greater
Critical	(II)	10 to 20
Marginal	III	5 to 9
Negligible	IV	1 to 4
**None	V	0

*Apply hazard severity category to Table B-3.

**If hazard severity value is 0, you do not need to complete Part II of this form. Proceed to Part III and use a RAC score of 5 to determine your appropriate action.

PART II. Hazard Probability. The probability that a hazard has been, or will be created, due to the presence and other rated factors of unexploded ordnance or explosive materials on a formerly used Department of Defense (DOD) site.

AREA, EXTENT, ACCESSIBILITY OF OE HAZARD (Circle all that apply)

A. Locations of OE hazards:	VALUE
On the surface	5
Within tanks, pipes, vessels, or other confined areas	4
Inside walls, ceilings, or other building/structure	3
Subsurface	(2)

Location (select the single largest value) _____

What evidence do you have regarding the location of OE?
Evidence of OEW in the landfill is provided by Roy F. Weston, Inc., 2000. Geotechnical surveys of the Possible OEW Burial site indicate a large number of magnetic anomalies (SSPORTS, 1999). An interview with former NAS personnel indicated that inert ordnance was buried in the southeast corner of the West Beach Landfill (SSPORTS, 1999).

B. Distance to nearest inhabited location/structure likely to be at risk from OE hazard (road, park, playground, building, etc.)	VALUE
Less than 1,250 feet	5
1,250 feet to 0.5 mile	4
0.5 mile to 1.0 mile	(3)
1.0 mile to 2.0 miles	2
Over 2 miles	1

Distance (select the single largest value) 3

What are the nearest inhabited structures/buildings? Buildings on the former NAS have been leased for commercial use; the buildings are within 1 mile of the site.

C. Number(s) of building(s) within a 2-mile radius measured from the OE hazard area, not the installation boundary.	VALUE
26 and over	(5)
16 to 25	4
11 to 15	3
6 to 10	2
1 to 5	1
0	0

Number of buildings (select the single largest value) 5

Narrative: There are a large number of residences within 2 miles.

D. Types of Buildings (within a 2 mile radius)	VALUE
Educational, child care, residential, hospitals, hotels, commercial, shopping centers	(5)
Industrial, warehouse, etc.	4
Agricultural, forestry, etc.	3

Detention, correctional	2
No buildings	0
Types of buildings (select the single largest value)	5

Describe the types of buildings: There are residential and commercial districts within 2 miles.

E. Accessibility to site refers to access by humans to ordnance and explosives. Use the following guidance	VALUE
No barrier nor security system	5
Barrier is incomplete (e.g., in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4
A barrier (any kind of fence in good repair), but no separate means to control entry. Barrier is intended to deny access to the site.	(3)
Security guard, but no barrier	2
Isolated site	1
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel continuously monitors and controls entry; or, an artificial or natural barrier (e.g., fence combined with a cliff) which completely surrounds the area; and, a means to control entry at all times through the gates or other entrances (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the area).	0
Accessibility (select the single largest value)	3

Describe the site accessibility: Fences surround the site.

F. Site Dynamics. This deals with site conditions are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion on beaches or streams, increasing land development that could reduce distances from the site to inhabited areas or otherwise increase accessibility.

VALUE

Expected	(5)
None anticipated	0

Site Dynamics (select the single largest value) 5

Describe the site dynamics: Portions of the site will be developed as a Wildlife Refuge with increased public access (California Trade and Commerce Agency, 2000: http://www.cedar.ca.gov/military/current_reuse/alameda.htm)

TOTAL HAZARD PROBABILITY VALUE (Sum of largest values for A through F (maximum of 30) 23

Apply this value to Hazard Probability Table B-2 to determine Hazard Probability Level.

TABLE B-2

HAZARD PROBABILITY*

Description	Level	Hazard Probability Value
Frequent	A	27 or greater
Probable	(B)	21 to 26
Occasional	C	15 to 20
Remote	D	8 to 14
Improbable	E	Less than 8

*Apply Hazard Severity Category to Table B-3.

PART III. Risk Assessment. The risk assessment value for this site is determined using the following Table. Enter the results of the Hazard Probability and Hazard Severity values.

TABLE B-3

Probability Level		Frequent A	Probable B	Occasional C	Remote D	Improbable E
Severity Category:						
Catastrophic	I	1	1	2	3	4
Critical	II	1	(2)	3	4	5
Marginable	III	2	3	4	4	5
Negligible	IV	3	4	4	5	5

RISK ASSESSMENT CODE
(RAC)

RAC 1	Expedite INPR, recommending further action by USAESCH-Immediately call USAESCH-OE-S (comm 256-895-1582/1598).
(RAC 2)	High priority on completion of INPR-Recommend further action by USAESCH.
RAC 3	Complete INPR-Recommend further action by USAESCH.
RAC 4	Complete INPR-Recommend further action by USAESCH.
RAC 5	Usually indicates that No DOD Action Indicated (NDAI) is necessary. Submit NDAI and RAC to USAESCH.

PART IV. Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.

***Unexploded Ordnance Site Investigation Final Summary Report*, SSPORTS Environmental Detachment, October 1999.** Former NAS Alameda personnel identified the southeast corner of the West Beach Landfill as an area where inert ordnance was previously disposed. A geophysical survey was conducted at the Possible OEW Burial Site. Several large subsurface masses and discrete subsurface anomalies were revealed; because of high background noise, however, it could not be determine whether they were ordnance. The report states that further investigation is warranted.

Unexploded Ordnance Intrusive Investigation Implementation Work Package, Roy F. Weston, Inc., May 2000. This document states that in 1976, 4 truck loads of inert ordnance from the Defense Logistics Agency, Alameda, were buried in IR Site 2. The inert ordnance ranged in size from 4 feet long by 12 inches wide, and also included smaller ammunition. The document also states that there was a one time disposal of CS (o-Chlorobenzalmalonitrile) riot control agents placed in containers as a loose powder and buried in the landfill. The riot control agents were from the 1968-1969 Berkeley student riots.

APPENDIX C

EVALUATION OF REMOVAL ALTERNATIVES

APPENDIX C

EVALUATION OF REMOVAL ALTERNATIVES

Alternative 1 – Engineering/Institutional Controls

Alternative 1 entails an OEW sweep of IR Site 2 and engineering and institutional controls as a long-term remedy for the Possible OEW Burial Site. Ordnance would be left in place at the burial site. This alternative includes fencing to restrict access and placement of appropriate signs at the perimeter of the burial site that indicate institutional controls are in effect. The intent of the fence is to exclude human receptors from the burial site area.

Effectiveness

Alternative 1 is generally considered reliable and effective. In this case, the alternative would lower the risk to humans since the fence would prevent access to the burial site. This alternative would not appreciably reduce the risk to ecological receptors, which is required given the planned future use of the land as a wildlife refuge. The site may have greater access by the public when the site becomes a National Wildlife Refuge under the jurisdiction of the USFWS; therefore, this alternative may not be compatible with planned use for the site.

Minimal risk would be posed to the public or the environment during implementation. Workers installing the fence would be required to stay outside the site perimeter to minimize risk. Implementation of this alternative would temporarily disrupt the local environment due to sweeping and excavation and backfill activities.

Implementability

This alternative is technically and administratively feasible. Labor, materials, and equipment are readily available. Completing institutional controls can be a lengthy process due to bureaucratic reasons.

Cost

The cost to implement this alternative is approximately $620,500 as shown in Table C-1:

TABLE C-1

COST ESTIMATE FOR ALTERNATIVE 1 – ENGINEERING/INSTITUTIONAL CONTROLS[1,2,3]

Item		Cost
Project and construction management and procurement	$	73,000
Community relations/regulatory interaction	$	26,000
ESS[4] document and work plans	$	40,300
Project infrastructure	$	67,000
Mobilization/demobilization	$	11,200
Surveys	$	34,600
Visual surface sweep	$	73,700
Subtotal Costs	**$**	**325,800**
Contingency (20%)	**$**	**65,200**
Fee (10%)	**$**	**32,600**
ESTIMATED TOTAL COSTS	**$**	**423,600**

Notes:

1 Costs include indirect costs where applicable

2 OEW Sweep of IR Site 2; fencing placed around Possible OEW Burial Site

3 Accuracy approximately plus or minus 25%

4 ESRP - Explosives Safety Remediation Plan

Alternative 2 - Excavation, Removal of Ordnance, and Backfill

An OEW sweep for IR Site 2 and excavation of the Possible OEW Burial Site to a depth of 1 foot are performed. Soil is excavated and processed through a mechanical sifting apparatus and cleared of ordnance. After processing, the soil is backfilled to its original location. Soil excavation and backfilling are performed using excavators/bulldozers, backhoes, and front-end loaders.

Effectiveness

This alternative is reliable and effective. The hazards to humans and ecological receptors would be reduced because ordnance would be removed from the site to a depth of 1 foot, which will meet established remediation depth requirements for wildlife refuges (DoD, 1999).

Short-term risks of this alternative include risks to workers, nearby populations, and the environment. Explosion risks during excavation of ordnance can be high; therefore, experienced

and trained UXO personnel are required. Large quantities of soil would be excavated and sifted. These activities may generate dust that might require dust monitoring and control.

Implementation of this alternative would temporarily disrupt the local environment due to sweeping and excavation and backfill activities.

Implementability

This alternative is technically and administratively feasible. The labor, equipment, and materials are readily available. Locating, recovery, sifting, excavation, and backfilling operations are labor intensive and costly.

Cost

The cost to implement this alternative is $1,278,200 and shown in Table C-2.

TABLE C-2

COST ESTIMATE FOR PROPOSED ACTION[1,2,3]

Item		Cost
Project and construction management and procurement	$	292,000
Community relations/regulatory interaction	$	26,000
ESRP[4] document and work plans	$	53,700
Project infrastructure	$	268,000
Mobilization/demobilization	$	22,500
Surveys	$	46,100
Earthworks	$	187,200
Visual surface sweep	$	73,700
Ordnance/explosives off-site destruction transportation to DoD[5] factory	$	14,000
Subtotal Costs	**$**	**983,200**
Contingency (20%)	**$**	**196,600**
Fee (10%)	**$**	**98,300**
ESTIMATED TOTAL COSTS	**$**	**1,278,200**

Notes:

1 Costs include indirect costs where applicable

2 Soil excavated to depth of 1 foot and the excavation backfilled with original soil

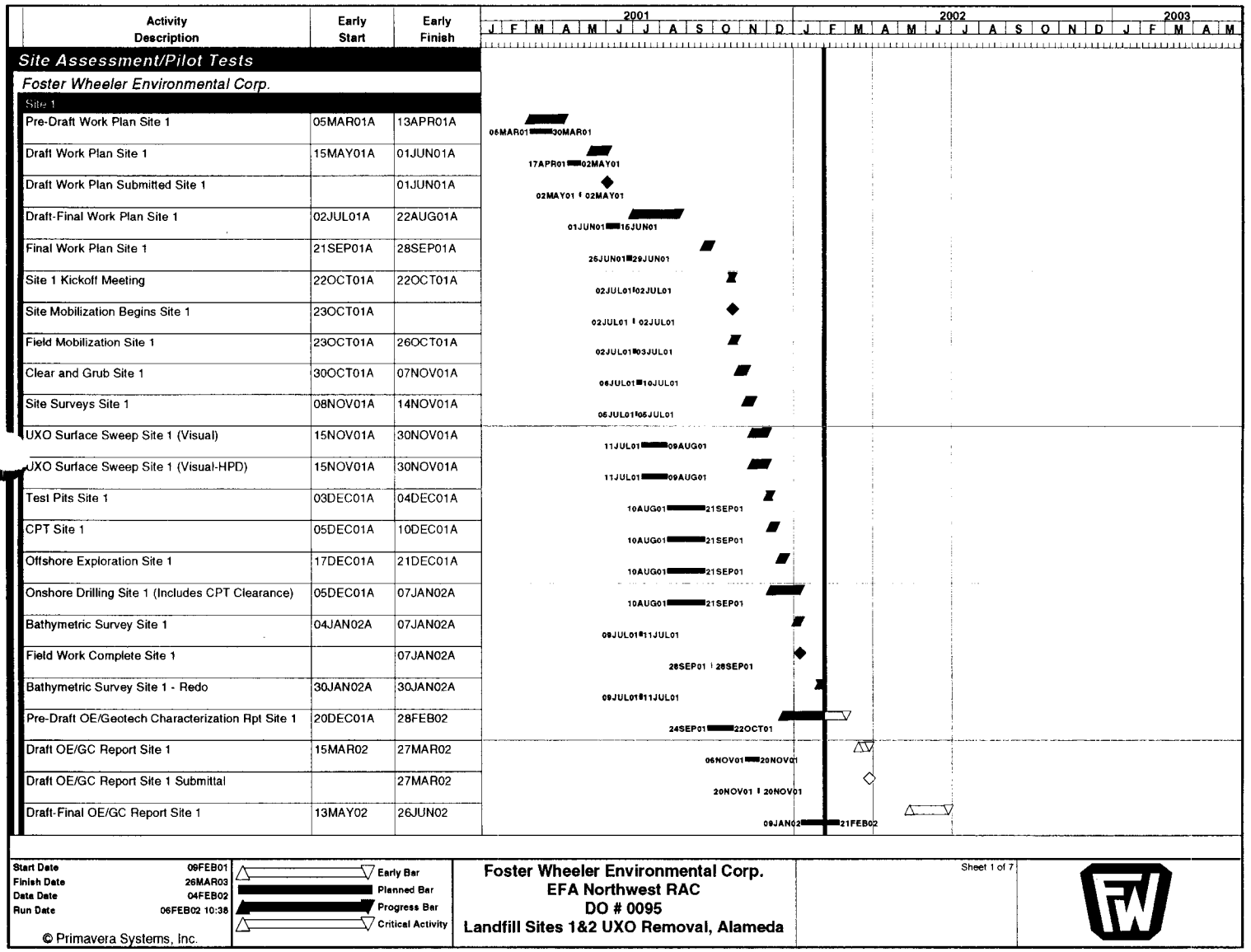
3 Accuracy approximately plus or minus 25%

4 ESRP - Explosives Safety Remediation Plan

5 DoD – U.S. Department of Defense

APPENDIX D

PROJECT SCHEDULE



Activity Description	Early Start	Early Finish
Site Assessment/Pilot Tests		
Foster Wheeler Environmental Corp.		
Site 1		
Pre-Draft Work Plan Site 1	05MAR01A	13APR01A
Draft Work Plan Site 1	15MAY01A	01JUN01A
Draft Work Plan Submitted Site 1		01JUN01A
Draft-Final Work Plan Site 1	02JUL01A	22AUG01A
Final Work Plan Site 1	21SEP01A	28SEP01A
Site 1 Kickoff Meeting	22OCT01A	22OCT01A
Site Mobilization Begins Site 1	23OCT01A	
Field Mobilization Site 1	23OCT01A	26OCT01A
Clear and Grub Site 1	30OCT01A	07NOV01A
Site Surveys Site 1	08NOV01A	14NOV01A
UXO Surface Sweep Site 1 (Visual)	15NOV01A	30NOV01A
UXO Surface Sweep Site 1 (Visual-HPD)	15NOV01A	30NOV01A
Test Pits Site 1	03DEC01A	04DEC01A
CPT Site 1	05DEC01A	10DEC01A
Offshore Exploration Site 1	17DEC01A	21DEC01A
Onshore Drilling Site 1 (Includes CPT Clearance)	05DEC01A	07JAN02A
Bathymetric Survey Site 1	04JAN02A	07JAN02A
Field Work Complete Site 1		07JAN02A
Bathymetric Survey Site 1 - Redo	30JAN02A	30JAN02A
Pre-Draft OE/Geotech Characterization Rpt Site 1	20DEC01A	28FEB02
Draft OE/GC Report Site 1	15MAR02	27MAR02
Draft OE/GC Report Site 1 Submittal		27MAR02
Draft-Final OE/GC Report Site 1	13MAY02	26JUN02

Start Date	09FEB01
Finish Date	26MAR03
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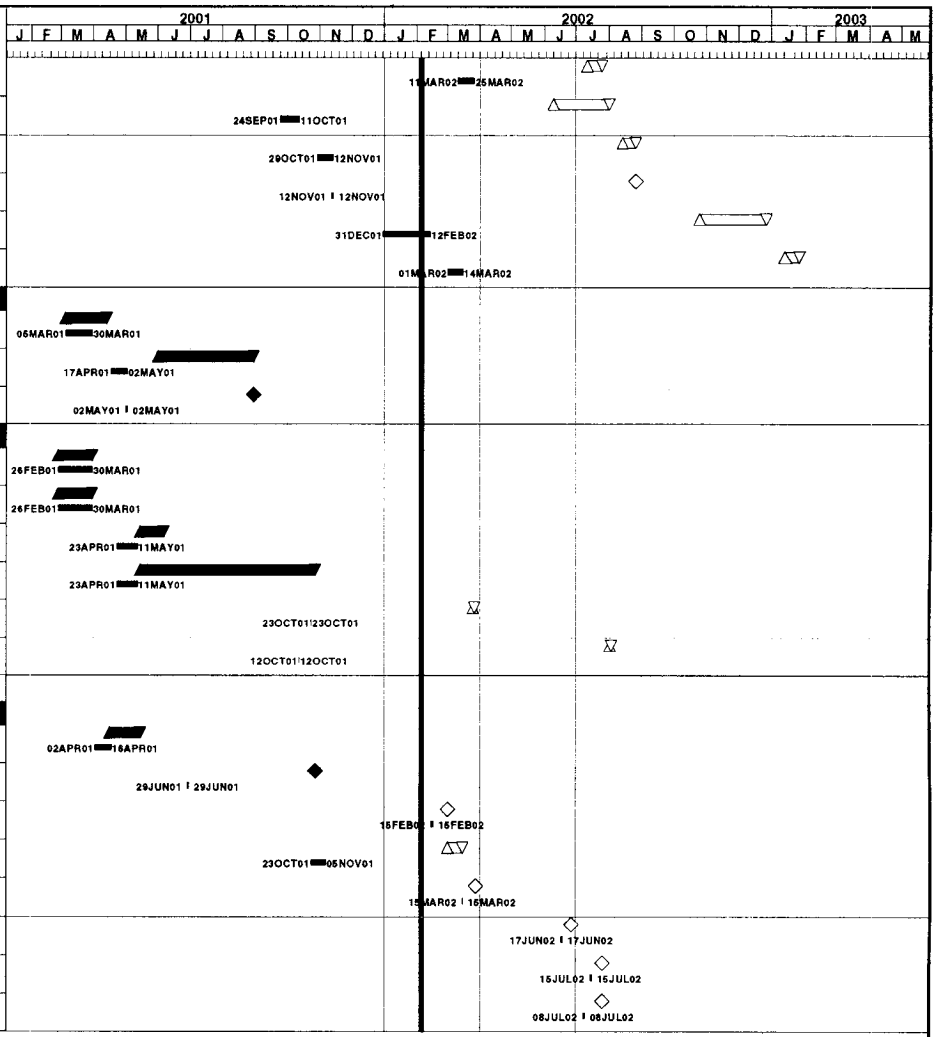
Early Bar
Planned Bar
Progress Bar
Critical Activity

Foster Wheeler Environmental Corp.
EFA Northwest RAC
DO # 0095
Landfill Sites 1&2 UXO Removal, Alameda

Activity Description	Early Start	Early Finish
Final OE/GC Report Site 1	12JUL02	25JUL02
Pre-Draft FS Attachment Site 1	10JUN02	01AUG02
Draft FS Attachment Site 1	14AUG02	26AUG02
Draft FS Attachment Site 1 Submittal		26AUG02
Draft-Final FS Attachment Site 1	25OCT02	26DEC02
Final FS Attachment Site 1	13JAN03	24JAN03
Site 2		
Pre-Draft Work Plan Site 2	05MAR01A	13APR01A
Draft Work Plan Site 2	01JUN01A	29AUG01A
Draft Plans Submitted Site 2		29AUG01A
Draft Base-Wide Health & Safety Plan (HSP)	26FEB01A	30MAR01A
Draft Site HSP Sites 1&2	26FEB01A	30MAR01A
Final Site HSP Sites 1&2	15MAY01A	05JUN01A
Final Base-Wide HSP	15MAY01A	26OCT01A
Community Relations Presentation - UXO	25MAR02	25MAR02
Community Relations Presentation - Geotech	02AUG02	02AUG02
NAVFAC Southwest Division		
Site 1		
Pre-Draft Work Plan Site 1 Navy Review	16APR01A	14MAY01A
Final Plans Approved Site 1		26OCT01A
Pre-Draft OE/GC Report Site 1 EPA Submittal		28FEB02*
Pre-Draft OE/GC Report Site 1 Review	01MAR02	14MAR02
Draft OE/GC Report Site 1 EPA Submittal		27MAR02*
Draft-Final OE/GC Report Site 1 EPA Submittal		26JUN02*
Final OE/GC Report Site 1 EPA Submittal		25JUL02*
Final OE/GC Report Site 1 Approved		25JUL02



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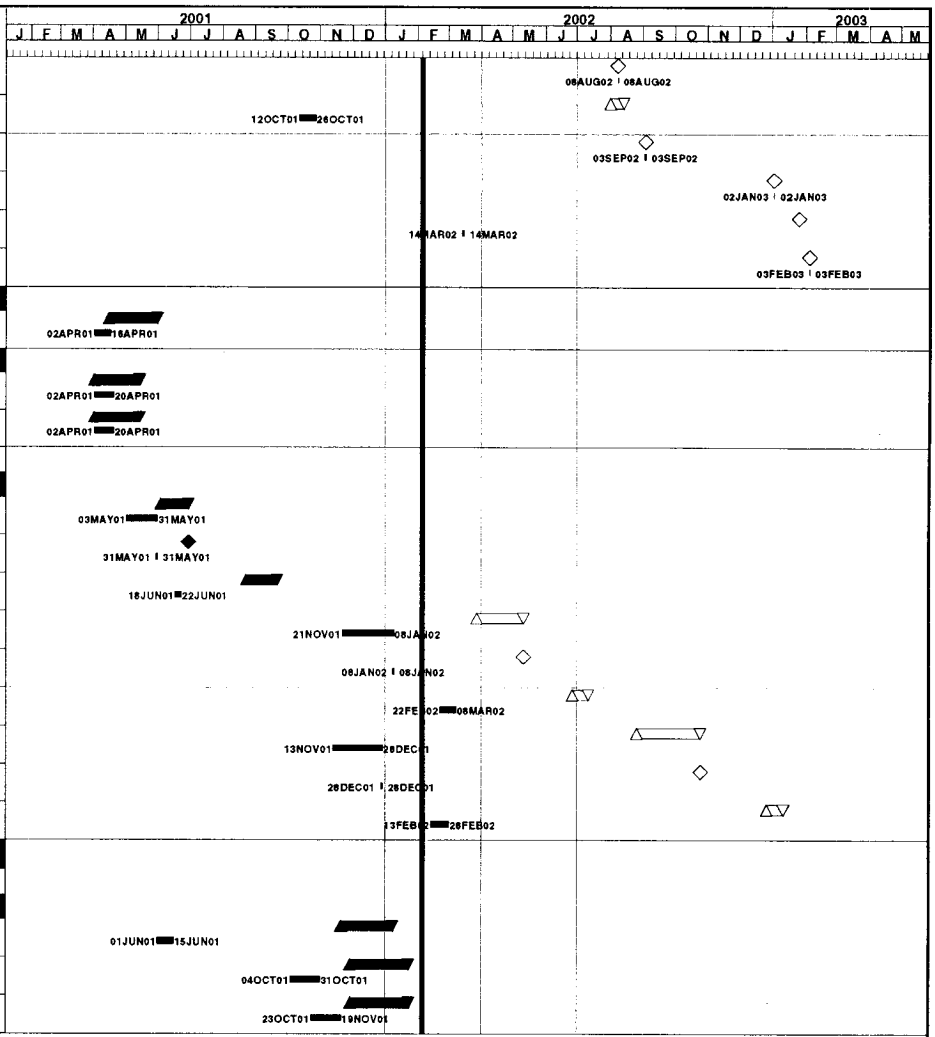
Foster Wheeler Environmental Corp.
EFA Northwest RAC
DO # 0095
Landfill Sites 1&2 UXO Removal, Alameda

Activity Description	Early Start	Early Finish
Pre-Draft FS Attachment Site 1 EPA Submittal		08AUG02*
Pre-Draft FS Attachment Site 1 Review	02AUG02	13AUG02
Draft FS Attachment Site 1 EPA Submittal		03SEP02*
Draft-Final FS Attachment Site 1 EPA Submittal		02JAN03*
Final FS Attachment Site 1 Approved		24JAN03
Final FS Attachment Site 1 EPA Submittal		03FEB03*
Site 2		
Pre-Draft Work Plan Site 2 Navy Review	16APR01A	31MAY01A
Draft Base-Wide HSP Navy Review	02APR01A	14MAY01A
Draft SHSP Sites 1&2 Navy Review	02APR01A	14MAY01A
Government & Regulators		
Site 1		
Draft Work Plan Site 1 Agency Review	04JUN01A	29JUN01A
Draft Work Plan Reviewed Site 1		29JUN01A
Draft-Final Work Plan Site 1 Agency Review	23AUG01A	20SEP01A
Draft OE/GC Report Site 1 Agency Review	28MAR02	10MAY02
Draft OE/GC Report Site 1 Reviewed		10MAY02
Draft-Final OE/GC Report Site 1 Review	27JUN02	11JUL02
Draft FS Attachment Site 1 Agency Review	27AUG02	24OCT02
Draft FS Attachment Site 1 Reviewed		24OCT02
Draft-Final FS Attachment Site 1 Review	27DEC02	10JAN03
Pre-Construction Submittals		
Foster Wheeler Environmental Corp.		
Site 2		
Draft-Final Work Plan Site 2	20NOV01A	07JAN02A
Pre-Draft Time Critical Removal Actn Mm (Site 2)	29NOV01A	22JAN02A
Draft Explosive Safety Submission (ESS) Site 2	29NOV01A	22JAN02A



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Foster Wheeler Environmental Corp.
EFA Northwest RAC
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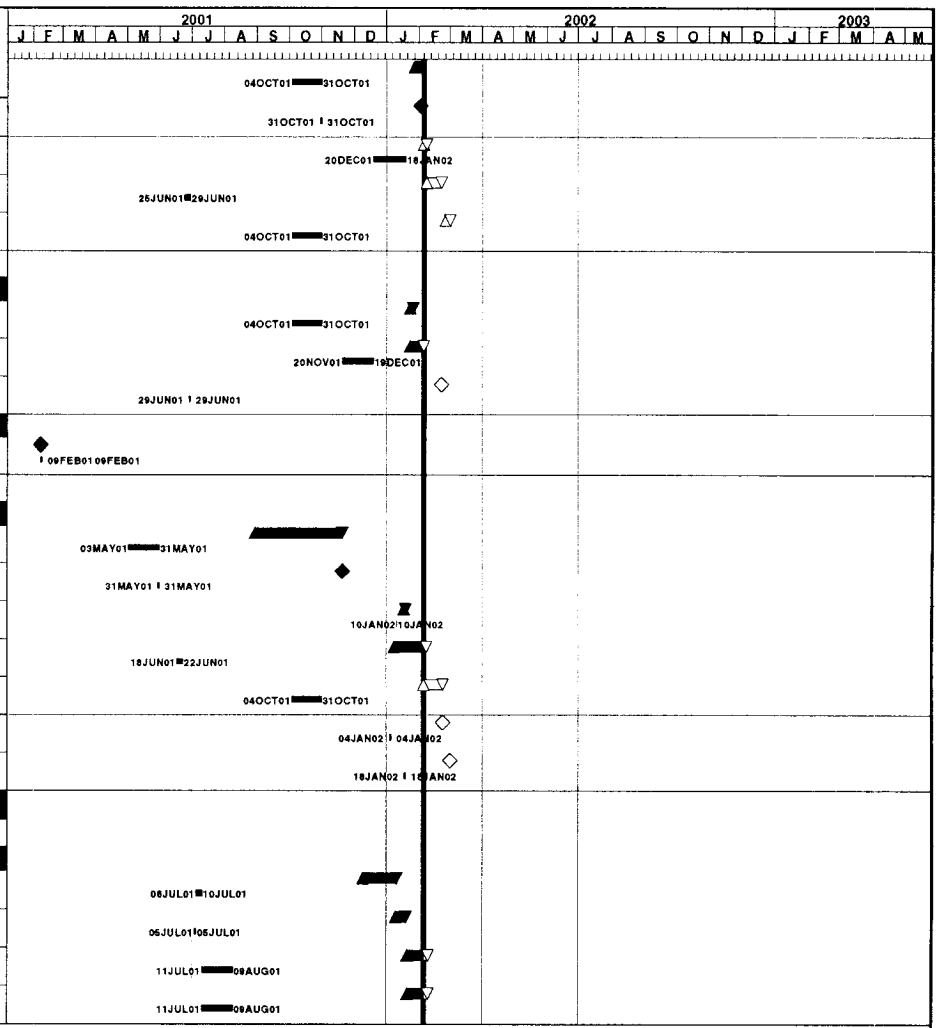
Landfill Sites 1&2 UXO Removal, Alameda

Activity Description	Early Start	Early Finish
Draft TCRA Memo (Site 2)	28JAN02A	01FEB02A
Draft TCRA Memo (Site 2) Submittal		01FEB02A
Final ESS Site 2	05FEB02	06FEB02
Final Work Plan Site 2	07FEB02	21FEB02
Final TCRA Memo (Site 2)	25FEB02	01MAR02
NAVFAC Southwest Division		
Site 2		
Pre-Draft TCRA Memo Review (Site 2)	23JAN02A	25JAN02A
Draft ESS Review	23JAN02A	04FEB02
Final Plans Approved Site 2		21FEB02
DO Award	09FEB01A	
Government & Regulators		
Site 2		
Draft Work Plan Site 2 Agency Review	30AUG01A	19NOV01A
Draft Work Plan Reviewed Site 2		19NOV01A
Agency Authorizes Site 2 Surface Sweep	18JAN02A	18JAN02A
Draft-Final Work Plan Site 2 Agency Review	08JAN02A	06FEB02
Draft TCRA Memo Review (Site 2)	04FEB02	22FEB02
Draft TCRA Reviewed Site 2		22FEB02
Final TCRA/ESS Site 2 Approved		01MAR02
Construction		
Foster Wheeler Environmental Corp.		
Site 2		
Clear and Grub Site 2	10DEC01A	10JAN02A
Site Surveys Site 2	09JAN02A	18JAN02A
UXO Surface Sweep Site 2 (Visual)	21JAN02A	08FEB02
UXO Surface Sweep Site 2 (Visual-HPD)	21JAN02A	08FEB02



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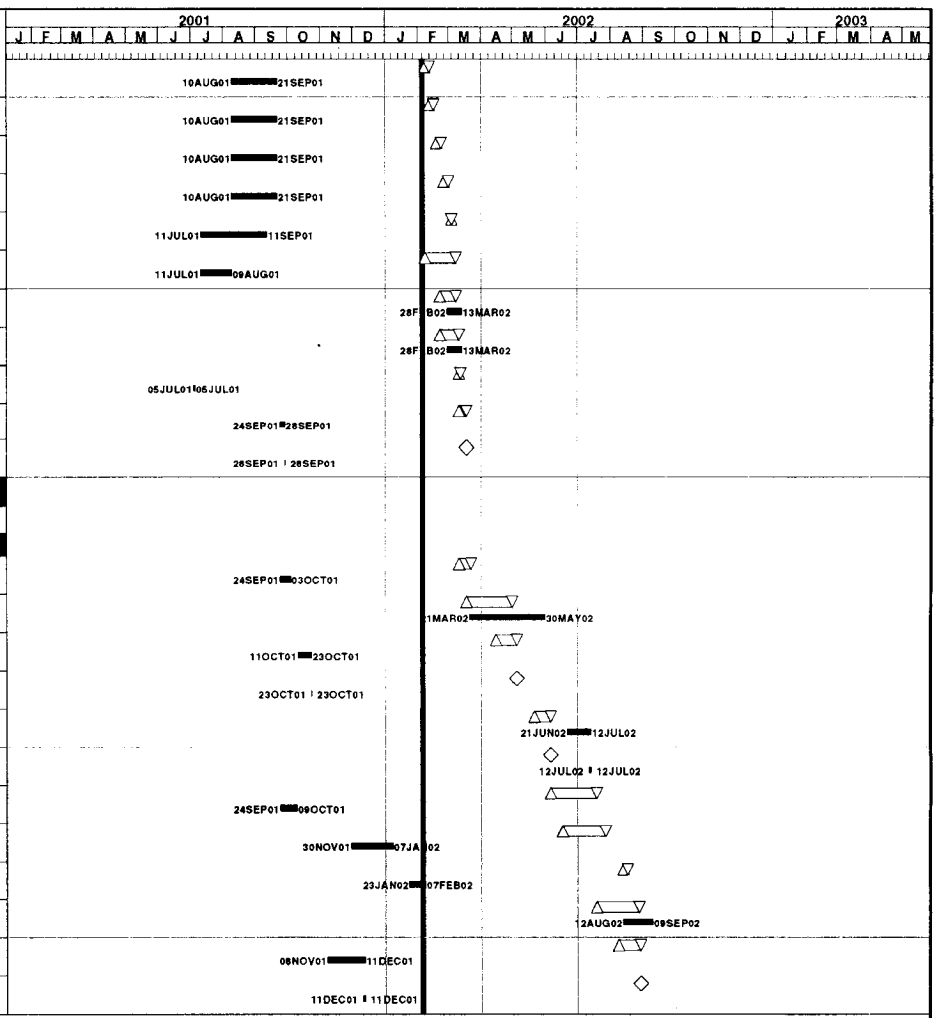
Landfill Sites 1&2 UXO Removal, Alameda

Activity Description	Early Start	Early Finish
Upland Exploration Site 2 (Test Pits/UXO Clear.)	07FEB02	11FEB02
UXO Avoidance Borings	11FEB02	15FEB02
Upland Exploration Site 2 (CPT)	19FEB02	22FEB02
Upland Exploration Site 2 (Sample Boring)	25FEB02	01MAR02
OE Off-Site Transport Site 2 (DOD)	04MAR02	04MAR02
Surface Sweep/OE Burial Area	07FEB02	07MAR02
Soil Sifting Site 2	21FEB02	08MAR02
Excavation w/Backfill - OE Burial Site	21FEB02	11MAR02
Site Aerial Topographic Survey	12MAR02	12MAR02
Field Demobilization Site 2	12MAR02	18MAR02
Site Demobilization Complete Site 2		18MAR02
Post Construction Submittals		
Foster Wheeler Environmental Corp.		
Site 2		
Pre-Draft Report of Findings Site 2	11MAR02	22MAR02
Pre-Draft OE/GC Report Site 2	19MAR02	29APR02
Draft Report of Findings IR Site 2	15APR02	03MAY02
Draft Report of Findings Site 2 Submittal		03MAY02
Draft OE/GC Report Site 2	21MAY02	04JUN02
Draft OE/GC Report Site 2 Submittal		04JUN02
Pre-Draft FS Attachment Site 2	05JUN02	17JUL02
Draft-Final Report of Findings Site 2	17JUN02	26JUL02
Final Report of Findings Site 2	12AUG02	16AUG02
Draft-Final OE/GC Report Site 2	18JUL02	27AUG02
Draft FS Attachment Site 2	08AUG02	28AUG02
Draft FS Attachment Site 2 Submittal		28AUG02



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Foster Wheeler Environmental Corp.
EFA Northwest RAC
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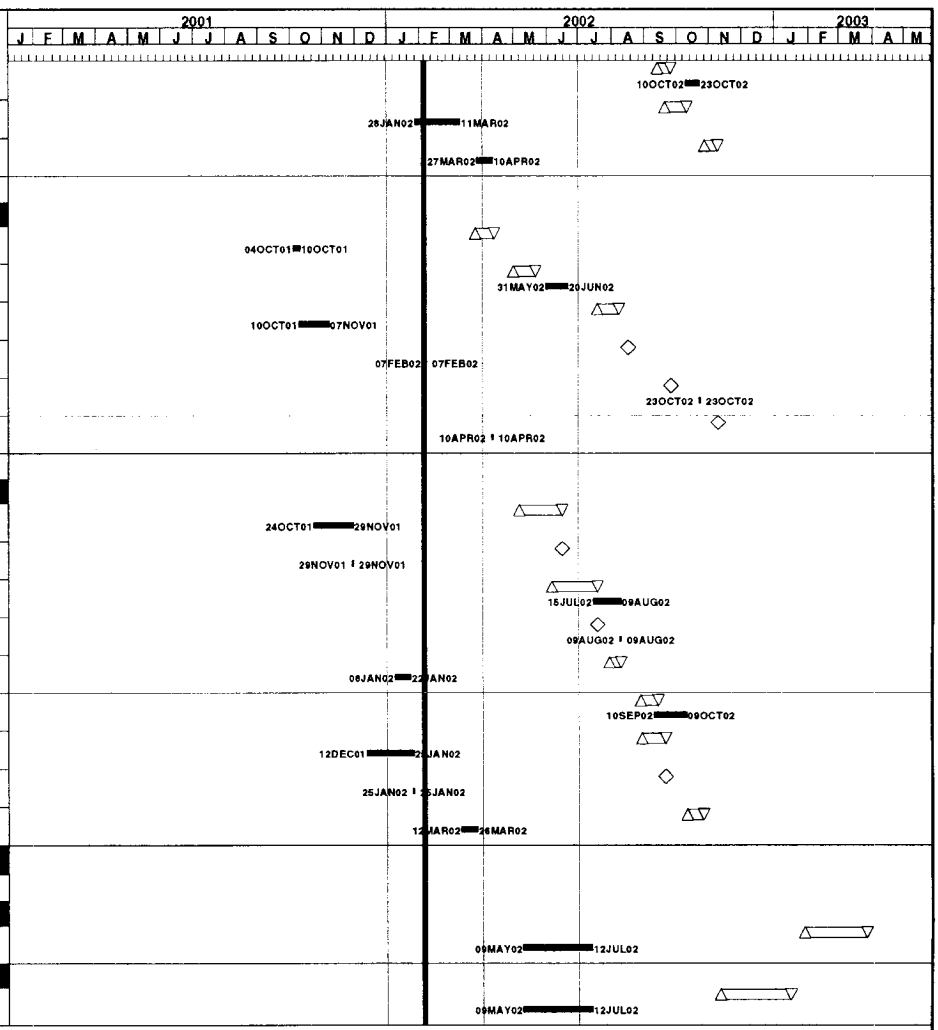
Landfill Sites 1&2 UXO Removal, Alameda

Activity Description	Early Start	Early Finish
Final OE/GC Report Site 2	13SEP02	25SEP02
Draft-Final FS Attachment Report Site 2	20SEP02	10OCT02
Final FS Attachment Site 2	28OCT02	08NOV02
NAVFAC Southwest Division		
Site 2		
Pre-Draft Report of Findings Site 2 Review	25MAR02	12APR02
Pre-Draft OE/GC Report Site 2 Review	30APR02	20MAY02
Pre-Draft FS Attachment Site 2 Review	18JUL02	07AUG02
Final Report of Findings Site 2 Approved		16AUG02
Final OE/GC Report Site 2 Approved		25SEP02
Final FS Attachment Site 2 Approved		08NOV02
Government & Regulators		
Site 2		
Draft Report of Findings Site 2 Agency Review	06MAY02	14JUN02
raft Report of Findings Site 2 Reviewed		14JUN02
Draft OE/GC Report Site 2 Agency Review	05JUN02	17JUL02
Draft OE/GC Report Site 2 Reviewed		17JUL02
Draft-Final Report of Findings Site 2 Review	29JUL02	09AUG02
Draft-Final OE/GC Report Site 2 Review	28AUG02	12SEP02
Draft FS Attachement Site 2 Agency Review	29AUG02	19SEP02
Draft FS Attachment Site 2 Reviewed		19SEP02
Draft-Final FS Attachment Site 2 Review	11OCT02	25OCT02
Job Closeout		
Foster Wheeler Environmental Corp.		
Site 1		
Site Assessment Closeout Site 1	27JAN03	26MAR03
Site 2		
Closeout Site 2	11NOV02	14JAN03



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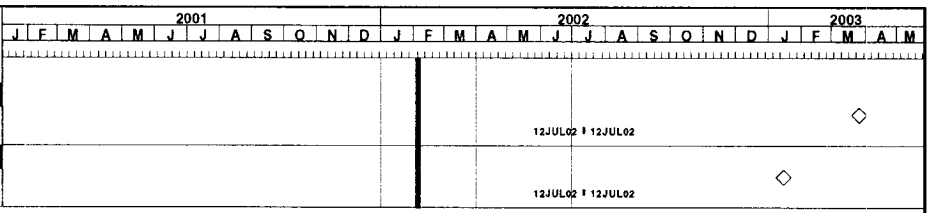
Landfill Sites 1&2 UXO Removal, Alameda

Activity Description	Early Start	Early Finish
NAVFAC Southwest Division		
Site 1		
Site Assessment Completion Site 1		26MAR03
Site 2		
Completion Site 2		14JAN03



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